

**Syphilis of the circulatory system : a compilation of abstracts from the  
Division of venereal diseases compilation no. 6, July 1, 1927 / United States  
Public Health Service.**

**Contributors**

United States. Public Health Service.

**Publication/Creation**

Washington, D.C. : U.S. Government Printing Office, 1927.

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TREASURY DEPARTMENT  
UNITED STATES PUBLIC HEALTH SERVICE  
HUGH S. CUMMING, SURGEON GENERAL

**SYPHILIS  
OF THE CIRCULATORY SYSTEM**

A COMPILATION OF ABSTRACTS

*from the*  
**DIVISION OF VENEREAL DISEASES**  
**COMPILATION No. 6**  
JULY 1, 1927

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ISSUED BY THE  
**UNITED STATES PUBLIC HEALTH SERVICE**  
FOR USE IN ITS COOPERATIVE WORK WITH THE  
**STATE HEALTH DEPARTMENTS**



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UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON

1927



THE TREASURY DEPARTMENT  
UNITED STATES PUBLIC HEALTH SERVICE  
HIGH SCHOOL, BOSTON, MASS.

OF THE CIRCULATORY SYSTEM  
STYPLIS

A COMPILATION OF ABSTRACTS

DIVISION OF VENEREAL DISEASES

COMPILATION NO. 1

1917

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## SYPHILIS OF THE CIRCULATORY SYSTEM

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**The larger view of heart disease.**—S. R. Roberts. Read before the section of medicine, Southern Medical Association, New Orleans, La., November 25, 1924.

In the registration area in 1922 heart disease is given as a cause of death in 134,184 cases. Then follow kidney diseases with 78,312; cancer with 78,355; cerebral hemorrhage, 76,538; pulmonary tuberculosis, 75,905; and lobar pneumonia with 45,171. Heart disease in New York City kills three times as many as tuberculosis, more than twice as many as cancer, and it is estimated that 150,000 persons die of heart disease in the Republic annually.

During the last 50 years the length of the average life has increased from 35 to 58. The average length of life of union workers increased in the last 23 years 18 years and 8 months per life.

Among the causes of deaths from aortic insufficiency, syphilis stands with 75 per cent. Tonsillitis, rheumatism, and chorea are probably responsible for 60 per cent of chronic heart disease. On the average 2 per cent of industrial workers, school children, and insurance applicants suffer from cardiac lesions. The author gives a report from the University of Georgia, where 1,762 students examined in three years showed 6 per cent of organic heart disease. Among the drafted men each twenty-fifth had heart disease. If this is the case in the younger men, 50 per cent would be the estimated frequency for all.

From infancy to 40 years of age is the time when the rheumatic group, focal infections, and infectious diseases are at work in the production of heart disease. From 40 to 55 syphilis is the main cause, and after 55 the degenerative changes are largely responsible.

The remedy for these heart diseases must be sought in prevention mainly. By preventing the rheumatic tendency 60 per cent of endocarditis, valvulitis, and organic heart disease may be controlled. "The damage from syphilis to the heart and vessels will continue as long as society tolerates venereal diseases. There is no more reason for a citizen to have syphilis than there is for him to have leprosy." \* \* \* "Has not civilization had enough of syphilis? Is it not primarily a question of prevention rather than one of attempted cure? Is not a disease with such potential promise of



damage a proper subject for all the forces of preventive medicine and stringent action by the public-health agencies? ”

The author stresses the necessity of annual general examinations.

**Heart disease as a public-health problem.**—Don M. Griswold. *Am. J. pub. health*, New York, 1927, XVII, 101.

Luetic aortitis is an infectious disease which has an important place in the study of heart disease. A reduction in the incidence of syphilis and better treatment of this disease will reduce the possibilities of heart damage from this cause.

Demonstration is one of the best means of convincing the public, the patient, and those who appropriate funds, of the reliability of any program, and the experience gained in the administration of clinics for tuberculosis, venereal disease, and child welfare will assist administrators of public health in preparing a program of heart-disease clinics.

**Heart disease.**—G. C. Kilpatrick. *New Orleans med. and surg. J.*, 1925, LXXVII, 465.

“According to Cabot, hearts fail as a result of three main causes: Rheumatism, which he places at 40 per cent, while others name figures as high as 60 per cent; hypertension 40 per cent; and syphilis 12 per cent. These last two \* \* \* are confined almost entirely to persons over 40 years of age.”

**The young “cardiac cripple,” with special reference to ex-soldiers.**—Francis H. McCrudden and Paul D. White. *Boston med. and surg. J.*, 1923, CLXXXIII, 164.

The per cent of cases of heart disease at United States Public Health Service Hospital No. 36 with rheumatic or syphilitic history is given as follows:

	Per cent
Rheumatism .....	61
Syphilis .....	10
Both rheumatism and syphilis .....	3
Scarlet fever .....	3
Total with rheumatic or syphilitic history .....	77
Neither rheumatic nor syphilitic history .....	23

**The rôle of acute infections and contagious diseases in childhood in the etiology of cardiovascular disease in the adult.**—Alvin E. Siegel. *Arch. pediat.*, New York, 1922, XXXIX, 314.

Siegel gives the results of examination of 297 recruits between the ages of 21 and 31 who were rejected as unfit because of cardiovascular abnormalities. The contributing etiologic factors giving rise to these lesions were, in order of frequency of incidence, as follows: Measles in 61.6 per cent, pertussis in 41.75 per cent, rheumatism in 41.4 per cent, tonsillitis in 36.4 per cent, growing pains in 25.3 per cent, pneu-



monia in 17.8 per cent, typhoid fever in 16.2 per cent, malaria in 15.5 per cent, syphilis in 15.2 per cent, no history in 14.1 per cent, scarlet fever in 12.8 per cent, diphtheria in 11.9 per cent, dysentery in 11.1 per cent, and chorea in 5.4 per cent.

**Research on the cardiac function in the secondary stage of syphilitic infection.**—O. I. Saggiaro. *Cuore e. circolazione*, Rome, 1924, VIII, 137.

During the secondary stage circumscribed myocardial foci develop which may be resting, and can be found only upon minute investigation. Subjective symptoms may be experienced, such as cardiospasm, extrasystole, tachycardia, and dyspnea. There is an increase in the transverse cardiac diameter, irregular, weak, arrhythmic pulse with thick heart sounds, the picture of true myocardia. The disturbances in the innervation of the circulation are frequent, at the point of entry of the vagus termination in the atrii. Extrasystole, tachycardia, cardiospasm, and a condition of vagotonia, and positive Dagnini reflex, which is often exaggerated, and in some cases accompanied by vomiting, syncope, lipotemia—all are signs of this disturbance in the innervation.

Cardiac function must be carefully tested, and the entirety of body functions must be studied minutely. Katzenstein's phenomenon must be sought, and the effect of compression of the eyeball determined.

**Death and disabilities from heart disease. A public-health problem.**—John L. Heffron. *Am. J. pub. health*, New York, 1924, XIV, 653.

Exciting causes of heart disease are listed. In 927 cases there were 331 cases of probable association with rheumatic fever, 207 with acute tonsillitis, 163 with carious teeth, 7 with chorea, 78 with scarlet fever, 47 with diphtheria, 54 with measles, 14 with pertussis, and 122 with syphilis. The cases due to syphilis were over 30 years of age.

**The heart and aorta in early syphilis. Clinical observations.**—Kenneth B. Turner and Paul D. White. *Arch. int. med.* Chicago, 1927, XXXIX, 1.

A study of the literature shows that clinical evidence of cardiovascular disease in early syphilis is rare. The present report is based on a series of 50 cases of primary and early secondary syphilis seen in the south medical department of the Massachusetts General Hospital in the spring of 1926. The cases were studied by means of a complete cardiac history and thorough physical examination of the heart, supplemented by Röntgen ray and electrocardiograph. No definite clinical evidence of disease of the heart or aorta was shown in any case.



**Principles and practice of chemotherapy.**—John A. Kolmer. W. B. Saunders Co., Phila., and Lond., 1926, Chapter LXXV, Specific treatment of visceral syphilis, p. 979.

*“Cardiovascular lesions of chronic syphilis.*—A rather large literature has accumulated upon this subject since Morgagni and other early writers first called attention to the syphilitic nature of aneurysms. Within recent years the studies of Brooks (Amer. Jour. Med. Sci., 1913, 146, 513), Howard (Amer. Jour. Med. Sci., 1922, 163, 64; *ibid.*, 1924, 167, 266), Symmers (Jour. Amer. Med. Assoc., 1916, 66, 1457), Warthin (Amer. Jour. Syph., 1918, 2, 425), Levison (Am. Jour. Syph., 1918, 2, 45), Babcock (Amer. Jour. Syph., 1920, 4, 35), Tyler (Amer. Jour. Syph., 1920, 4, 38), Hubert (Deut. Arch. f. klin. Med., 1919, 128, 317), McKensie (Glasgow Med. Jour., 1919, 112, 209), and numerous others have greatly aided in drawing attention to the importance of this subject with improved means for clinical diagnosis during life and detection after death. My pathological classification of these lesions is as follows:

- “(a) Syphilitic pericarditis and epicarditis { Diffuse.  
Localized (gumma).
- “(b) Syphilitic myocarditis { Parenchymatous.  
Interstitial.  
Diffuse (usual).
- “(c) Syphilitic endocarditis—usually of aortic valves with regurgitation.
- “(d) Syphilitic sclerosis of coronary arteries.
- “(e) Syphilitic aortitis { Without dilatation.  
With fusiform dilatation.  
With aneurysm.
- “(f) Syphilitic arteritis of { General arteriosclerosis with or without  
peripheral vessels. { hypertension.  
Local arteriosclerosis.  
Aneurysms.
- “(g) Syphilitic phlebitis of peripheral veins { General.  
Local with thrombosis.

“In a treatise of this kind detailed descriptions of the gross and pathological tissue changes are not demanded, except in so far as these bear a relation to treatment. While detailed accounts of the histological changes are lengthy and complicated, the subject, after all, can be reduced to rather simple terms. In other words, the pathological changes produced by *Sp. pallida* in the cardiovascular system are similar in every way to those produced in other organs; namely, (a) the production of inflammatory exudates of plasma cells and small lymphocytes, especially around small vessels and lymphatics,



except in cases of extreme latency when these may be almost absent; (b) the production of albuminous, hyaline, fatty, or other degenerations of the parenchymatous cells as a result of spirochete toxins and particularly vascular occlusions; and (c) the production of fibrous tissue, as in all chronic inflammations.

"As would be expected, that portion of the heart and aorta subject to most strain (the anterior wall of the left ventricle and first portion of the aorta) are most likely to show involvement. Aortic valvulitis, sclerosis, and aneurysms of the ascending aorta are the most frequent vascular lesions; indeed, aneurysms of the aorta, and especially of its ascending and arching portions, is so frequently syphilitic that all should be regarded as syphilitic until proven otherwise. While sclerosis of the coronary arteries is of frequent occurrence, yet angina pectoris is only exceptionally of syphilitic origin and heart block is but rarely due to syphilis, although Gaucher (*Jour. d. méd.*, 1918, 37, 29) and others claim that angina pectoris is frequently of syphilitic origin. However, writers on this subject have not always clearly distinguished between precordial pain due to aortitis and stretching of this vessel and true angina pectoris. Of the peripheral vessels, involvement of the cerebral arteries, and especially of the middle cerebral artery and its branches, is best known because of the frequency of aneurysms, thrombosis, and rupture of these vessels with the production of hemiplegia due to the frequency of their involvement and poor support by the cerebrospinal fluid and soft consistency of the brain tissue. Hypertension is so frequently due to chronic cardiovascular syphilis, as shown by Audbry and Nanta (*Bull. Soc. franc. d. dermat. et syph.*, 1921, 6, 202) and others, that this origin is always worthy of serious consideration and study."

**Syphilis of the heart and blood vessels.**—Tasker Howard. *Am. J. med. sc.*, New York, 1924, CLXVII, 267.

Cardiovascular syphilis is of frequent occurrence with a high mortality. It may often be controlled with proper treatment. The author found cardiac abnormalities in 40 of 100 patients. Thirty to 60 per cent of all cases of aortic regurgitation, many cases of angina pectoris, and practically all cases of aortic aneurysm are due to syphilis.

While few autopsies have been performed in the early stages of infection, it has been conclusively shown that the heart and aorta may be invaded by the treponema at this period. Parenchymatous degeneration is seen in the muscle. About small branches of the coronaries and vasa vasorum of the aorta, there have been found little collections of lymphoid and epithelioid cells. Perfection of the aorta through a syphilitic lesion at this stage has been described. Fragmentation of the muscle fibers and proliferation of the fixed



connective tissue cells with ultimate scar formation follow. Within the aorta these processes are said to begin in the adventitia and outer layers of the media, working toward the intima, which ultimately becomes thickened and hyaline. Pressure on these weakened areas produces aneurysms. Involvement near the root of the aorta usually includes the aortic valve, giving rise to aortic regurgitation. The orifices of the coronaries are often partially blocked with secondary myocardial degeneration. In the smaller vessels, as in the brain, there are perivascular infiltration, thickening of the walls, obstruction of the blood flow, formation of miliary aneurysms.

The clinical signs of cardiovascular involvement are edema, dilatation, palpitation, throbbing carotids, pain, and occasionally extrasystole. Reduplication of the second sound at the apex is a common sign.

Aortic regurgitation is the commonest type of syphilitic cardiac lesion. Figures on the relative frequency of the syphilitic or rheumatic origin vary considerably. Thirty-six per cent of the author's cases were syphilitic. It is usually discovered long after the original infection. In the early stages, when the only symptoms are palpitation or throbbing in the neck and head on exertion, specific treatment may leave the patient with a sufficient myocardial margin to meet the increased demands of a leaky valve. After dyspnea and edema have developed this margin of safety, and possibly more, is lost. Heart muscle does not regenerate and scar tissue is useless. Rest and specific treatment may, however, bring about some improvement.

While it is impossible in most cases to give routine antisyphilitic treatment, arsphenamin should not be discarded but used with caution in minimal doses. Treatment may be begun with intramuscular injections of one of the insoluble salts of mercury,  $\frac{1}{2}$  gr. to  $1\frac{1}{2}$  gr. in weekly doses. This may be followed by neoarsphenamin, 0.2 gm. After toleration to specific treatment has been established the usual course may be followed, arsphenamin being substituted for neoarsphenamin.

**Syphilis of the heart and aorta.**—I. I. Lemann and A. Mattes. Southern med. J., Birmingham, 1920, XIII, 623.

The authors studied the hearts and aortas of 100 consecutive autopsies without regard to age or sex or race. The cause of death was manifold, absolutely no attempt being made to select cases. Number of aortas dissected was 100. There were 55 that gave a microscopic picture of syphilis. Spirochetes were found in the aortas of two cases; there were 2 cases of aneurysm.

*Observations.*—The rarity with which a perfectly healthy adult aorta was seen; the large percentage (55) in which the histological



findings corresponded with what has been set down as characteristic of syphilis of the aorta; the large proportion (27 out of 55) of the patients with changes in aortas, presumably syphilitic, who presented no evidence of cardiovascular disease during life, or so little or of such obscure origin that it was not set down in the history.

**Syphilis of the heart.**—John Cowan and J. K. Rennie. *Brit. med. jour.*, London, 1921, II, 184.

The diagnosis of this condition is by no means easy—any disease of the heart may be due to syphilis. In a series of 104 patients with disease of the aortic valves 30.7 per cent had syphilis. In a series of cases of aortic aneurysm, 19 in number, the origin was syphilitic in 63.1 per cent. In a corresponding series of mitral valvular disease only 0.8 per cent had suffered with syphilis. In the treatment both the cardiac side and the syphilitic must be borne in mind.

**Syphilis of the heart and aorta (with special reference to the early stage of the disease) and its appropriate treatment.**—Thomas Horder. *British jour. ven. dis.*, London, 1926, III, 117.

There are four basic facts which render this subject of supreme importance. The first is that syphilis is a disease that is amenable to treatment. The second is that the success of such treatment is directly proportionate to the early stage at which the diagnosis is made and the treatment begun. The third is that the tissues concerned are of vital importance not only to health but to life. The fourth is that if once structural changes have taken place before the disease is recognized, then, even though healing is effected, the secondary changes produced in the heart and aorta are of great importance in limitation of activities and even in premature death.

The author thinks it is the man of 25 to 35 in whom early aortitis of a syphilitic nature is suspected. The symptoms of the early state are largely problematical, and various signs and symptoms are described in relation to syphilitic disease of the heart. Several cases are cited. One suggestive symptom is given, that of heart block or the so-called Stokes-Adams syndrome. If observed in a man under 50, the syphilitic disease may still be amenable to treatment, and if under 40 the chance is still better. If the patient is over 60, while the syphilitic factor may have been the cause years ago, degeneration has taken place, and the condition does not respond to antisymphilitic treatment.

The author has little to say of treatment of this disease, except that one must proceed cautiously. Mercury and iodid are given at the same time, followed by a routine series of doses of novarsenobillon or neokharsivan. Prolonged recumbent rest should be insisted upon for months rather than weeks.



**Syphilis of the aorta and heart.**—William D. Smith. Boston med. and surg. J., 1925, CXCIII, 387.

Death from syphilitic disease of the heart is more common than from neurosyphilis and, probably, all other forms of visceral syphilis combined.

It is important to realize that the significant lesions forming the background for most of the recognized clinical types of syphilitic heart disease are those beginning in the aorta. Whether the end process be aneurysm, aortic disease, or angina, the primary process is a localized aortitis.

Cardiac syphilis is a disease of middle life, and is far commoner in men than in women. The period between infection and symptom is usually from 15 to 20 years. While the diagnosis in late cases is not difficult, in early cases the diagnosis rests not on any characteristic sign or symptom but on an intelligent clinical suspicion plus all the help the laboratory can give. The fluoroscope and Röntgen ray are as important in the examination of the latent syphilitic as lumbar puncture.

Arsenic is a dangerous drug to begin the treatment with. It should be used after a preliminary course of mercury and iodid. The initial dose should be small, gradually increasing as tolerance is established. It has been the writer's experience that, generally, those cases which showed no improvement from mercury and iodid did not improve with the addition of arsenic.

**Observations from a clinical study of 401 patients with cardiovalvular defects.**—David Perla. Med. J. and rec., New York, 1926, CXXIII, 281.

The percentage of cases in this series in which the heart disease is attributable to syphilis is much lower than that reported by other writers, there being only 16 cases, or 3.9 per cent. Boas in studying 536 cases of valvular heart disease admitted to the same hospital (Montefiore) during the period 1914 to 1921 found a percentage of 8.2. These figures would seem to indicate that this type of heart disease is uncommon among the Jews. Of 182 cases of aortic insufficiency which Longcope collected from the literature, 74.1 per cent were syphilitic, and Broomhead reports an incidence of 58.7 per cent. The author, however, agrees with Boas that the incidence of syphilis as a cause of valvular disease (generally aortic) is overestimated.

**Heart disease—The chief cause of deaths. Causes and prevention.**—George S. Bel. New Orleans med. and surg. J., 1925, LXXVIII, 360.

"Greene states that the United States now contains approximately 2,700,000 adults carrying some grade of syphilitic aortitis, of which



2,160,000 are men, 540,000 women. Hubert in 8,652 consecutive admissions to a general hospital service found 8.8 per cent positive blood Wassermanns. All admissions to Bellevue and the Presbyterian Hospital in New York gave 20 per cent positive blood Wassermanns. All admissions to Peter Bent Brigham Hospital, Boston, resulted in 15 per cent positive blood Wassermanns. An extended investigation by the United States War Department (Vedder) showed that nearly 17 per cent of accepted recruits were Wassermann positive, and upon the basis of results obtained at a certain military college it is asserted as probable that 5 per cent of college students are so infected. Greely found a positive blood Wassermann in 8.4 per cent of 1,000 or more applicants for peddling licenses in New York City. From 3 to 6 per cent of babies under 1 year of age are victims of hereditary syphilis."

**A study of the etiology of heart disease in Virginia: A preliminary report.**—J. Edwin Wood and Thomas Duckett Jones. *Virginia med. monthly*, Richmond, 1925, LII, 8.

A report on 150 cases of organic heart disease in the University of Virginia hospital. Syphilis was given as the cause in 10 cases, or 5.6 per cent. The average age was 48 for the seven men and 35 for the three women. Three of the cases were white and seven colored.

This group comprised cases of aortic regurgitation and aortitis, with or without aneurysm, and myocardial disease without other cause and occurring with proved syphilis. All had positive Wassermanns except one—a woman who had given birth to a child with congenital syphilis. Röntgenograms showed evidence of aortitis in three cases and an aortic aneurysm in one.

**Cardiovascular disease in the Tropics.**—Louis Faugere Bishop. *Am. J. trop. med.*, Baltimore, 1926, VI, 455.

The author has reviewed the histories of about 40 people from the Tropics who have consulted him because of some actual or supposed cardiac condition and six cases of syphilis are noted. He believes that these conditions do not differ materially from what one might expect to find in northern countries, except that syphilis seems to be a little more prevalent in tropical countries. Several cases are cited.

**Syphilis and cardiac disease in India.**—Imperial social hygiene congress, Wembley, October 5–7, *Lancet*, London, 1925, II, 777.

Sir Leonard Rogers read a paper in which he made a comparison of the incidence of syphilis and cardiac diseases in India with that in England. Rheumatic endocarditis, in 1,000 post-mortems in London, gave a mortality of 3.7 per cent, whereas in Calcutta there were no deaths from this cause. Aneurysm gave 3.2 per cent for London, 1.59 per cent for Calcutta. Ulcerative endocarditis was



also more frequent in London than in India. Practically all the heart disease in India was due to syphilis.

**The etiology of heart disease. A clinical study of 623 cases with certain observations on race and climate.**—J. Edwin Wood, jr., T. Duckett Jones, and Ray D. Kimbrough. *Am. J. med. sc.*, Philadelphia, 1926, CLXXII, 185.

Organic heart disease is almost twice as common in the negro as in the white.

Hypertension (53.5 per cent) and syphilis (21.4 per cent) are the chief etiologic factors producing heart disease in the negro.

Angina pectoris (paroxysmal heart pain) is less common in the negro (5.3 per cent) than in the white (10.4 per cent), despite the fact that syphilis (21.4 per cent) and arteriosclerosis (39.3 per cent) are such important factors in the former.

Rheumatic heart disease is almost twice as common in Massachusetts (39.8 per cent) as in Virginia (22 per cent), and this is the largest etiologic group in the former locality.

**Heart disease in New England.**—Paul D. White and T. Duckett Jones. *Association of American Physicians*, May, 1926. *J. Am. med. assoc.*, Chicago, 1926, LXXXVI, 1792.

This is an abstract of the paper which was read at the meeting. The incidence for syphilitic disease is given as 4 per cent for New England, which is low compared with figures for New York. The congenital rate is high in the hospital series because so many syphilitic children are referred for treatment. It was the opinion of the authors and of those taking part in the discussion that rheumatism was almost as frequent a cause of aortic insufficiency as syphilis.

**Circulatory syphilis. A review of 100 cases.**—Norman Strauss. *Ann. clin. med.*, Baltimore, 1926, V, 562.

The average age of patients in this series was 53.5 years, the youngest being 24 and the eldest 77; 85 per cent were male and 15 per cent were female; 79 per cent were white and 21 per cent black; 24 cases died, 67 were discharged improved, and 9 discharged as unimproved.

Circulatory syphilis is a common condition, and syphilitic myocarditis does exist clinically. Mercury and potassium iodid are the drugs of choice for the treatment of this condition. Syphilis does not produce an enlarged heart.

**The hygiene of the heart.**—William H. Robey. *Hygeia*, Chicago, 1926, IV, 65.

Discusses syphilis as a cause of heart and circulatory diseases.



**Analysis of a series of cases of cardiovascular syphilis.**—H. L. Heimann. Brit. med. jour., London, 1927, I, 133.

This article deals with 105 cases of cardiovascular syphilis, 97 males and 8 females. The ages of the patients ranged from 22 to 71, the average age being 48 years. Thirty-one of the patients had a history of chancre; the average time between infection and admission to hospital was  $24\frac{1}{2}$  years.

All of the patients had positive blood Wassermann reactions. Three patients had histories of acute rheumatism, none of whom had mitral stenosis. One case terminated in an infective endocarditis. The symptomatology and course of these cases were not unlike the others. Valvular involvement in the form of aortic regurgitation occurred in 81 patients; no organic valvular lesion was found in the remaining 24.

The critical symptoms, single or multiple, were: Shortness of breath, 55 cases; cardiac pain, 44; giddiness, 17; palpitation, 16; fainting attacks, 11; cough, 4; hemoptysis, 1; swelling of legs, 1.

Cyanosis occurs in a greater percentage of cases without aortic regurgitation, and pallor in a great percentage of cases with aortic regurgitation. The superficial arteries are thickened in the majority of cases, but blood pressure is rarely above 150 millimeters of mercury. Systolic blood pressure in the leg is greater than that in the arm, especially in cases with aortic regurgitation. The heart is often much enlarged even in cases with no aortic regurgitation and where the blood pressure is low. Syphilitic myocardial degeneration may occur without valvular impairment and sometimes without thickening of superficial arteries.

The electrocardiograph findings of prognostic value are: Changes in T wave in lead 2. Occurrence of interference in auriculo-ventricular conduction. Notching of the Q. R. S. complex. Auricular fibrillation. Signs of cardiac failure are also of prognostic significance.

It is necessary to distinguish between aortic regurgitation of syphilitic and that of rheumatic origin. Rheumatic cases generally appear in young adults; a history may often be found, while in syphilis a history is difficult to elicit. In the great majority of rheumatic cases there is a definite stenosis with the typical facies; the aortic valve is generally the first to be involved; the diastolic murmur is blowing in character, and its area of maximum conduction is down the left side of the sternum. In syphilis the murmur is harsh, and maximum conduction is down the right side of the sternum; the accompanying signs in the central nervous system are of great diagnostic value. The arteries are thickened in pure rheu-



matic cases only when the pulse pressure is extremely high from large degree of aortic regurgitation.

Cardiovascular syphilis is a latent disease in the first 20 years of its course; once the symptoms have become manifest the progress is rapid, and the mortality is high. It is necessary to diagnose these cases in the latent stage in order that treatment may be more effective.

**Arteriosclerosis.**—Oskar Klotz. Canadian med. assoc. jour., Toronto, 1926, XVI, 11.

The feature which makes syphilitic mesarteritis distinctive in pathological lesion and clinical progress is that the virus of syphilis, once implanted, remains active for long periods of time, 5, 10, or even 20 years. Frequently recognition of the condition does not come until 5 years after the primary infection, and aneurysms frequently not until 10 years or more.

There is progressive destruction of the essential elements of the arterial wall as long as the spirochetes are present, but when the spirochete is removed from the injured tissues no progressive lesion follows. This applies to aneurysm. Every progressive aneurysm is still infected by spirochetes.

**Heart disease. Its diagnosis and treatment.**—Edgar F. Kiser. J. Indiana state med. assoc., Fort Wayne, 1927, XX, 7.

In every case careful search for syphilis should be made, but if found to be an etiological factor, antisyphilitic drugs must be administered with the greatest caution. Small doses of mercury and the iodids should be given preference over the arsenicals, for it is in cases of this character that arsphenamin and drugs of this type may precipitate an Herxheimer reaction. The prognosis is serious, but many patients survive and may lead fairly active lives.

Patients with heart disease may be divided, according to etiology, into two great groups—those whose ailment is the result of syphilis and those resulting from acute rheumatic fever, chorea, tonsillitis, streptococcic infection, and influenza.

**The modern viewpoint in cardiovascular examinations.**—William C. Munly. Mil. surgeon, Washington, 1924, LIV, 195.

Munly writes as follows of the association of syphilis with cardiovascular diseases:

*Aortic valve disease.*—The main etiologic factors are syphilis, rheumatic fever, and arteriosclerosis. In children and young adults rheumatic fever is the usual cause, and in these cases there is generally an associated mitral disease. Pure aortic insufficiency found in middle life is most commonly syphilitic in origin. (Lamb.) In aortic valve disease there are practically always myocardial changes

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Digitalis and diuretics with antisyphilitic remedies constitute the treatment. Good results have been seen from mercury and iodid. If tissue damage is not yet severe, specific treatment is most effective. It is not so where thickening, calcareous deposits, and aneurysm cause heart block.

Syphilitic diseases of the blood vessels are more frequent and more important, especially those of the arteries. Aortic disease generally sets in 20 years after the infection, but it may be congenital. Media and adventitia stretch, become over elastic, and connective tissue is destroyed while the intima proliferates. This causes thickening in the adjacent arteries and decrease of the lumen. Generally the coronary, the cervical, and the intercostal arteries are involved. In almost two-thirds of these cases the aortic valve is diseased. This is not so frequently the case in arteriosclerosis. The valves become shortened and thickened and closure defective. This defect starts at the base. In inflammatory endocarditis from rheumatism or sepsis, the changes start at the borders. Saccular aneurysm is found mostly in the aortic arch from bulging of the wall. Atherosclerosis is more frequent in the abdominal aorta.

Often pain radiates from behind the sternum to the left shoulder or arm or to the neck, the lower jaw, and the back. When met with in robust persons between the ages of 45 and 55 the aorta must be examined.

The apex beat is generally found at the normal site. In the depth of the jugulum a large pulsating subclavian artery is found in the center of the supraclavicular fossa. The brachial plexus which the finger meets back of the sternocleido muscle is sensitive up to the shoulder. Often the nerves of the left arm are sensitive to the sulcus bicipitalis and the ulnar region of the left hand. These conditions constitute aortalgia. This may explain the effectiveness of cutting the depressor nerve and extirpating the supreme cervical ganglion in angina pectoris. Patients suffer from these conditions upon exertion.

In 81 or more per cent the second aortic sound is metallic. Accentuation may also occur from increased nervous excitability. In emphysema the metallic sound may change to simple accentuation. Aside from these changes in the second sound, there may be a systolic soft blowing sound over the aorta or over the manubrium of the sternum only, extending to the second and third intercostal spaces.

Percussion is not very satisfactory. The region of cardiac dullness is chimney-shaped. In some cases of aortic diseases the vascular dullness is displaced to the right or the left, or both, and may surpass the sternal borders by 1 or 2 fingers' breadth. This increase in dull area is also found in neoformations of the thyroid, thymus,



lungs, or lymphatic glands. Diascopy will show the difference. Often an attack of angina pectoris is the first symptom of aortitis, and a number of aortic patients die from it.

Engorgement in the peripheral vessels as it occurs with or without angina pectoris points to decreased functional efficiency of the cardiac muscle. In many cases collateral circulation is easily established. In two-thirds of the cases the aortic valves are diseased.

Pulsus differens may occur on account of vascular constriction in the arm. It may be accompanied by numbness in the fingers and nose or by vertigo and fainting. In one-third of all cases of aortitis saccular aneurysm forms.

**Syphilis as a cause of chronic diseases of the second half of life.—**

U. Arcangeli. Policlinico, Rome, 1925, sez. prat., XXXII, 167.

Not only syphilis, but other intoxications such as alcoholism, saturnism, tobacco poisoning, gout, and acute and chronic infections play a part in the diseases of the second half of life. Often these other intoxications join with the syphilitic infection and cause a complex condition. Although syphilis exists in from 15 to 20 per cent of city populations, the discovery of it is very often merely accidental. It is a fact that very often a determination can not be reached in regard to whether or not these diseases are syphilitic. The Wassermann reaction does not always conclude the argument. Naturally the discovery of treponema in the organs is the safest and often the only clue to the pathology.

There is no cardiac symptom which might not be produced by syphilis. The changes in strength and number of contractions, in the rhythm and arrhythm of the extrasystoles and the auricular fibril, all may occur in syphilis going on to incomplete blocking and Adams-Stokes disease. While syphilis is a frequent cause of these conditions in later life, it is the sole cause of them in young persons. There are a few cases not attributable to it in young persons, for instance, from diphtheric infection. Specific treatment may reestablish normal rhythm and alleviate heart block.

Chronic myocardiac symptoms in persons who have not had acute articular rheumatism and are not old suggest syphilis. In most cases angina pectoris is due to syphilis, and in rare cases is due to gout or tobacco abuse and less rarely to arteriosclerosis of the aged. Cardiac asthma is another syphilitic cardiovascular syndrome with paroxysmal attacks of dyspnea and pulmonary edema, with frothy, blood-stained expectoration coming on at night almost at a fixed hour. This condition is generally referable to insufficiency of the aortic valves. During the day these patients present symptoms of myocardial insufficiency. Generally they are able to go about their business during the onset of the disease. If the attack is preceded by a



marked increase of arterial pressure and if polyuria exists, the attack is generally more violent and more typical than at other times. During the later stages of the disease the asthmatic attacks are displaced by permanent dyspnea, with aggravation during the night. The polyuria then is absent. Almost all these patients have a disturbance of renal function. The author is of the opinion that these are simple attacks of arterial hypertension from stimulation of the pressor nerves of the large splanchnic plexus which has been changed by syphilis and which has attacked the periaortic vessels. *Treponema pallidum* produces an irritation similar to that which it produces in gastric crises or tabes. Often these attacks are overcome within two or three days by one or a few injections of 606 or 914, and a few intravenous injections of cyanid of mercury will stop the attacks without further treatment. The vicious circle is stimulation of the pressor nerves by *Treponema pallidum*, arterial hypertension, fatigue of the left ventricle, persistent activity of the right, and pulmonary congestion and edema. Similar conditions are produced by gout.

Often aortitis with or without valvular insufficiency is the only sign of the infection. Often the symptoms of aortitis precede those of valvular insufficiency by years. It may be diagnosed by the case history and the positive Wassermann reaction, and there is a certain metallic second sound which is characteristic. It is doubtful whether aortic insufficiency exists in atheroma. In many instances a history of acquired infection can not be obtained. In these instances congenital syphilis must be suspected. Often aortitis is the only symptom to be found in the wife or widow of a syphilitic who has had stillbirths or abortions. Simple aortitis is not so serious, while valvular insufficiency must be considered so.

Similar cases, however, are seen in gout and diabetes. Often the conditions are found in women over 50, and much doubt remains whether they are syphilitic.

Some rare cases of mitral insufficiency and left-sided stenosis of the ostium are seen from syphilis. Insufficiency of the valve of the pulmonary artery and sclerosis of this artery are still rarer. Intense cyanosis, the blackheart of the French, is seen in involvement of the branches of this artery. The sclerotic process may extend into the intrapulmonary branches, from which starts the cyanosis, without severe disturbances of circulation. This proves the independence of this cyanosis from peripheral venous stasis. Some cases of hardening of the pericardium and mediastinum have been reported from syphilis. Only in rare exceptions is aneurysm other than syphilitic. Typhoid, abdominal aortitis, has been reported.

The Greeks and Romans knew nothing but traumatic aneurysm, and only in the sixteenth century was the first spontaneous aneurysm



described. This was a few years after the discovery of syphilis in Europe. Parée stated that those who had been suffering from "grande vérole" often had aneurysm. This correct observation was forgotten and arteriosclerosis blamed for most cases. It is not necessary to state that obliterating arteritis is of syphilitic origin. It presents itself in various ways. Intermittent claudication is of the same origin in many instances. Often, however, it is diabetic or tabetic in the syphilitic person. This condition is frequent in Russia and Poland. It may be due to a racial predisposition and to the cold, damp weather or the food.

In the syphilitic, veins may be sclerosed in spots and the vessel may be enlarged.

Pernicious anemia is generally syphilitic if it is not due to bothri-  
ocephalus. It is generally of conceptional syphilitic origin in the pregnant. It is considered that hemolytic icterus is caused by congenital syphilis. It may develop and persist in persons in the thirties. According to Murri, paroxysmal hemoglobinuria is of the same specific nature. Chronic chlorosis persisting in the adult is often attributed to congenital syphilis and syphilitic changes in the endocrin glands and the hematopoietic system.

Enlargement of the spleen, liver, and kidneys may be due to either acquired or congenital syphilis. The author is of the opinion that it is more often specific than malarial.

Pulmonary syphilis, though not rare, is generally passed for tuberculosis. Microscopic examination is essential. Chronic bronchitis, especially that which develops at the age of 40 and is associated with asthma, is suggestive of syphilis. The same is true of adenoid vegetations, asthma, ozena in infants and children. The author is of the opinion that syphilis is not infrequent in cases of pneumoconiosis. It may cause the development of specific bronchitis and pneumonia. He found that persons developing chronic bronchitis with asthma and emphysema upon inhaling flour were syphilitics. Chronic laryngitis, gumma of the trachea and the bronchi, and perforations of the nasal septum are often seen, and more rarely hardening of the pleura and exudative pleurisy during the secondary stage.

Gumma of the gastric walls may cause tumors and stenosis at the pylorus. Some writers state that all gastric duodenal ulcers, especially if chronic, are syphilitic. They may be acquired or congenital. The intestinal involvement is rare, but there have been some reports of syphilitic sigmoiditis. The disease occurs more frequently in the rectum, causing stenosis and proctitis. Of 14 cases seen by the author 13 confessed to a history of syphilis.

Not all diabetes can be ascribed to syphilis, but to chronic alcoholism and overnourishment, as well as obesity and gout. Diabetes



is a sign of pancreatic insufficiency, and a sclerotic pancreas can not be regenerated. Some of the severe cases of diabetes still remain a mystery.

The hepatic involvement may be due to several causes, often a combination of alcoholism and treponema. The Wassermann reaction is positive in 50 per cent of hepatic cirrhosis. Mercury and the iodids have for a long time been known to improve hepatic cirrhosis.

Chronic renal involvement showed 55 per cent of positive Wassermann reactions in a group of 120 of the author's patients. However, in 100 autopsies 72 showed undoubted syphilitic changes. The majority of these bodies were male. Any type of chronic renal disease may be associated with syphilis.

**Diagnosis of cardiovascular syphilis.**—William D. Reid. Boston med. and surg. J., 1923, CLXXXVIII, 189.

The first essential in the diagnosis of cardiovascular syphilis is that it be given a place among the various diagnoses to be considered in any patient in whom heart disease is deemed to be present. Every case affected by syphilis is a case of potential heart disease, i. e., cardiovascular syphilis.

Cardiovascular syphilis may be symptomless unless complications have ensued. If there be symptoms, pain and shortness of breath are the most typical, both being located by the patient as under the upper sternum. The pain is wont to show a radiation similar to that occurring in angina pectoris. The physical signs vary according to the nature and extent of the lesions present. Enlargement downward and to the left and an abnormal supracardiac dullness are common. The most frequent murmur is a systolic one at the aortic area. The aortic second sound is often of a duller tone, as in arteriosclerosis. There is nothing characteristic in the blood-pressure findings; unless the complication of aortic insufficiency has ensued, the blood pressure is within normal limits.

A positive Wassermann reaction is of value in supporting the diagnosis, but a negative report is often received and should not be allowed to shake the diagnosis of cardiovascular syphilis if sufficient other data point to the presence of that disease. The Röntgen-ray findings are often of great value, but it is inconsistent with our knowledge of the pathology of the disease to expect that all of the early cases will be detected. In advanced cases the diagnosis is usually simple, but in early cases it often happens that only a tentative diagnosis can be made. The therapeutic test for syphilis is of distinct value in doubtful cases.

The chief conditions to be differentiated are: Nonspecific aortitis, arteriosclerosis, hypertensive heart disease, rheumatic heart disease, pulmonary tuberculosis, mediastinal tumors, and tabes dorsalis.



**The diagnostic significance of abnormal heart sounds.**—Emmet F. Horine. Kentucky med. J., Bowling Green, 1926, XXIV, 166.

Diastolic murmurs in the second or third interspace either to the right or to the left of the sternum may or may not be organic. When such a murmur is discovered, not only should a careful survey of the heart be made but a Wassermann test should also be made. While it is true that the majority of murmurs in this area indicate an organic aortic regurgitation either of the rheumatic or syphilitic type, it is possible to have a functional aortic diastolic murmur especially in children, as pointed out by Morse. These functional murmurs show downward transmission and may be heard at the apex, so that considerable care must be exercised in differentiating them from the organic lesions.

**Cardiovascular syphilis.**—Paul F. Stookey. Med. clinics of North America, Philadelphia, 1924, VII, 1239.

"When the *Treponema pallidum* are disseminated from the local focus by the blood stream throughout the body, which fact is announced by secondary manifestations and a positive Wassermann, then the heart and great vessels are involved—cardiovascular syphilis exists."

The syphilitic process is most marked in the beginning of the aorta and the arch, most of the characteristic lesions being localized above the diaphragm. The aorta shows numerous depressions produced by the rupture and disintegration of the elastic tissue in the media, each depression representing a potential aneurysm. The degeneration of the media also produces a wrinkling of the intima characteristic of syphilis. Calcification is never caused by syphilis; if found it represents an associated atheromatous degeneration. The aortic ring is usually dilated; the arch shows dilatation; aneurysm may be present. The vasa vasorum show an extensive infiltration and marked deformity.

In the author's opinion the association of syphilis and the aortic valve is produced not by the deformity of the valve segments but by the degenerative process in the elastic tissue of the aorta, with dilatation of the first part of the aorta and the aortic ring.

The changes in the coronary vessels are similar to those in the aorta; the elastic tissue is degenerated. The condition is complicated by the deformed and constricted aorta from which the coronaries arise.

Calcification and obliteration of the lumen of the coronaries, seen post-mortem in anginal patients, is not attributable to syphilis.

Cardiovascular syphilis occurs most frequently in early life. Men, compared with women, are afflicted in a ratio of 4 to 1. Negroes are markedly susceptible.



The absence of the history of rheumatic fever or an acute infection in case histories is conspicuous.

High systolic blood pressure and a murmur, soft and blowing, diastolic in time, are characteristic.

**Syphilitic heart disease.**—S. A. Meza and J. Paulis. *Rev. espan. de med. y cirug.*, Barcelona, 1922, V, 199; *J. Am. med. assoc.*, Chicago, 1922, August 12.

Meza and Paulis believe that syphilis should be suspected in all kinds of heart disturbances, especially since Cesa-Bianchi's recent discovery of spirochetes in the heart in congenital syphilis. Electrocardiography is one of the most reliable means to detect latent mischief of this kind.

**The treatment of visceral syphilis.**—Albert Keidel and Jarold E. Kemp. *J. Am. med. assoc.*, Chicago, 1924, LXXXII, 299.

The term visceral syphilis is used to designate syphilitic disease of any of the viscera of the thorax, abdomen, pelvis, and scrotum. Visceral syphilis appears late in the course of the disease, only rarely in the early stages. The existence of an exudative type of syphilitic inflammatory reaction in the viscera during the period of general secondary manifestations is hardly to be doubted, but it is usually not manifested clinically by grave discords at that time. Minor functional disturbances disappear as the result of treatment.

Occasionally visceral complications arise, which must be taken into account in the course of treatment. Since the liver and kidneys must function in order to eliminate arsphenamin and mercury, acute nephritis and hepatitis should be recognized in their earliest forms in order to prevent toxic effects. Small doses should be administered until healing is indicated by normal functional tests.

A complete physical examination of every patient with early syphilis would so reduce the incidence of all late forms of nervous and visceral syphilis as to make their prevention a relatively simple matter.

In late or tertiary syphilis recovery without more or less residual permanent damage can not, as a rule, reward even the most thorough antisyphilitic treatment, as participation of fixed cells results in localized areas of impaired nutrition, sclerotic processes, granuloma, and degenerative changes. The recovery is further hindered in many cases by intolerance for certain drugs.

Eighty-three cases were the subject of the present study. Treatment consisted of six to eight weekly injections of arsphenamin or neoarsphenamin, alternating with from one to three months' treatment of mercury by inunction and potassium iodid by mouth. One course follows another without interruption, unless treatment is



irregular. Most of the patients have been under observation from three to five years. The results of treatment are satisfactory. The improvement is in direct proportion to the amount, regularity, and duration of the treatment.

Aortitis is the term used to designate changes characterized by fusiform dilatation of the aortic arch, demonstrable by physical signs or röntgenologic study, but without evidence of aneurysm or of valvular or myocardial disease.

The usual symptoms are substernal pain, often anginal in character, dyspnea, and cough. The patients have been under observation from three to five years. Comparing the results with the condition of 10 comparable untreated patients, all of whom became progressively worse during periods of from eight months to seven years, it is evident that the prognosis in uncomplicated aortitis is greatly improved by treatment and the improvement is in direct proportion to the amount, regularity, and duration of the treatment.

The results in aortitis with aneurysmal dilatation are not favorable. A comparison of progress made in treated patients with the condition of untreated cases shows that the prognosis does not depend on anti-syphilitic treatment alone and that reaction to drugs may be unfavorable. In one case, which was untreated, the size of the saccular aneurysm decreased, the Wassermann reaction became permanently negative, and clinical improvement was noted. In the treated cases little, if any, change in the size of the aneurysm was noted, although there was frequently clinical improvement. Hypertension was relieved in one case. Three patients with large saccular aneurysms have remained in a stationary condition free from symptoms for periods of from five to eight years.

The poor prognosis should not be a deterrent from treatment. Longer courses should be given and an attempt made to improve the patient's tolerance for arsphenamin. Neoarsphenamin may be safer than arsphenamin, but it must be administered with caution. Relief of symptoms or arrest of progress, even without decrease in the size of the aneurysm, constitute a notable gain. Except in the exceptional case, the process is seldom arrested without treatment.

All cases of aortic insufficiency or manifest myocardial disease are classed as cardiac syphilis. Of three patients treated with arsphenamin two died, apparently directly as a result of treatment, one immediately after a third injection, the second a few days after an injection. Deaths were preceded by signs of cardiac failure. Severe reactions in the third case prompted discontinuance of arsphenamin.

With mercury and potassium iodid as the only treatment, little can be accomplished. Only one showed any improvement. One is in an arrested stage; the remainder have grown worse or have died.



**The new pathology of syphilis.**—Aldred Scott Warthin. *Am. J. syphilis*, St. Louis, 1918, II, 425.

The disastrous effects of syphilitic infection usually require a period of years for their development. The slowly progressive lesions, fibrosis, and atrophy may at last manifest themselves in paresis, tabes, myocarditis, aortitis, aneurysm, diabetes, hepatitis, or in many other forms of tissue damage and functional disturbance. Lesions of the viscera are much more common and important clinically than those of the central nervous system, but they are rarely recognized as syphilitic by the clinician. Syphilitic death occurs most frequently in males between the ages of 40 and 60. Chronic myocarditis is the most common form of death due to syphilis.

**The myocardium in noninfectious myocardial failure.**—B. J. Clawson. *Am. J. med. sc.*, Philadelphia, 1924, CLXVIII, 648.

The detailed gross and microscopical study was made of 102 hearts. The condition of the orifices was especially noted, this being particularly important in syphilitic aortitis. The myocardium from both ventricles was dissected in the search for fibrotic areas and microscopical sections were studied from both apices, from the middle part of the ventricles, and from the septum. In the nine cases of definite syphilitic aortitis which were found, there were only three of myocardial fibrosis, and two of these seemed to be due to coronary sclerosis of the ordinary type. The conclusion is that syphilis of the myocardium is rare. Warthin, however, states that the fibroid heart is the ultimate outcome of all latent syphilis. He found that coronary sclerosis might or might not be associated with syphilitic myocarditis.

**Syphilitic myocarditis.**—S. Bloch. *Jour. de méd. de Paris*, 1923, XLII, 779.

Aside from syphilis of the aorta, which is frequent and well known by the associated angina pectoris and the accentuated second cardiac sound and double sound at the base, and with the radiogram showing dark irregular enlarged vessels, there is a syphilitic myocarditis. Sometimes this cardiac involvement is secondary and associated with aortitis; sometimes it is primary.

A man, aged 37, entered the clinic with dyspnea and edema of the lower extremities. The face was cyanotic, but there was no ascites. The liver was enlarged and painful. The heart was found in the fifth intercostal space and reached abnormally to the left. The cardiac sounds were heavy. Pulse frequency was 100. Extra systole alternated with simple palpitations. The râles in the lungs were sibilant and disseminated. On the skin white scars were spread. The radiogram showed increase in size of the right cardiac



cavities. The patient had had chancre three years previously. The Wassermann reaction was positive.

The cardiac condition was improved by digitalis. Later mercury cyanid was given.

This case is typical of syphilitic myocarditis. When it comes on in a young man without valvular or aortic lesions, and where a syphilitic infection exists and has not been healed or treated, the condition must be considered syphilitic. It develops rapidly, and mercury should be given at once.

**Gumma of the myocardium in a Malgache tirailleur (infantry) who died suddenly—Probably sporotrichosis.**—Henry Morin and H. Fabre. *Marseille méd.*, Marseilles, 1923, LX, 1430.

A soldier died suddenly who had seemed to be in good health until half an hour before death. At autopsy pleural adhesions were found on the right side, and considerable increase in size of the pericardial sac. When it was cut about 1 liter of blood fluid escaped and 200 gm. of clots. The heart was of normal size, containing a tumor about the size of a nut at the apex. A minute opening created a communication between the left ventricle and pericardial space. The opening seemed of recent date. Microscopically, a cavity the size of a pea was found in the region of Gerdy's fontanel. There was epicardial inflammation and desquamation. The apex was purulent and necrotic and surrounded by a typical inflammatory border. Masses of microorganisms, when stained, answered the classical description of sporotrix.

Myocardiac spirochetosis has so far not been reported. In the discussion Oddo said that the description closely resembled the lesions found in syphilitic myocarditis.

**Acute myocardial syphilis.**—William Boyd. *Arch. path. and lab. med.*, Chicago, 1926. II, 340.

Case cited is one of a woman, 62, suffering from weakness, polyuria, and polydipsia. Her condition was diagnosed as diabetes and essential hypertension. She was treated in the hospital with insulin and continued this treatment after returning home. Two years later she had an acute attack, with constant pain in precordial region, and died in hospital three days later.

On autopsy, the writer was unable to explain the meaning of collection of acute inflammatory cells, but several months later Warthin published a paper with illustrations of similar collections. The condition is known as "sudden death due to exacerbation of latent syphilitic myocarditis." Previous cases have all occurred in males.



**Spontaneous rupture of the heart.**—Franklin J. Hagen. *Am. J. med. sc.*, Philadelphia, 1926, CLXXI, 185.

A total of 320 cases have been reported. All the carefully studied cases occurring under 30 years of age are due to syphilitic myocarditis. In several instances no gross myocardial changes were evident. Inasmuch as syphilitic myocarditis may present no gross pathology, it seems plausible that a certain number of these cases, if studied microscopically, might come under this group.

Warthin has described certain pathognomonic microscopic characteristics in congenital syphilis of the myocardium. The smaller arteries have a lymphocyte, plasma cell, collar infiltration. Proliferating interstitial fibroblasts and groups of large, pale staining, irregular-sized endothelial cells and round cells are characteristic. Spirochetes, diffuse and numerous, may be found by special staining methods. There are areas of coagulation necrosis and fatty degeneration of the heart muscle in which no fibrosis or spirochetes are found. Some of the smaller vessels show endothelial cells proliferating in their walls after filling the lumen. The adventitia undergoes fibrous thickening and the perivascular tissues present fibrous hyperplasia and lymphocyte and plasma-cell infiltration. The interstitial changes are more marked than the vascular changes.

St. George briefly describes a rupture due to a gumma of the anterior wall of the left ventricle. No other instance was found in the literature.

**Stokes-Adams's disease due to gumma of the heart.**—Ralph H. Major. *Arch. int. med.*, Chicago, 1923, XXXI, 857.

Major reports a case in a man aged 34. Patient complained of shortness of breath, weakness, and frequent attacks of unconsciousness. There was no history of syphilis. The Wassermann was positive; red cell count, 5,000,000; white cells, 10,000; hemoglobin, 90 per cent. Necropsy revealed a gumma measuring 5.5 by 2 by 2 c. m. in the interventricular septum extending up to the base of the pulmonary valves and into the base of the aortic valve, involving two of the aortic leaflets.

Heart block associated with gumma of the heart is of infrequent occurrence. The author has been able to find only 11 cases in the literature up to 1922.

**Syphilitic rupture of a papillary muscle of the heart.**—Edward D. Spalding and William C. von Glahn. *Bull. Johns Hopkins hosp.*, Baltimore, 1921, XXXII, 30.

Spalding and von Glahn give case history because of rarity of condition. Only six cases of rupture of papillary muscle of heart are found in the literature; in none is there any reference to a syphilitic



infection, but an aneurysm of the aorta was present in one case. In the case reported here a moderate number of spirochetes were found in the tissues just beyond the necrotic area, which proves that the *Treponema pallidum* was the etiological agent in the production of the necrosis of the papillary muscle which subsequently ruptured.

**Diagnosis and care of the failing heart muscle.**—Allan Eustis. New Orleans med. and surg. J., 1926, LXXIX, 50.

Of 100 cases of myocardial insufficiency syphilis is the contributing cause of 5.

In the discussion Ledbetter remarked that in his opinion 90 per cent of all aortic lesions are due to syphilis.

**Unrecognized syphilitic myocarditis.**—Clifford E. Henry. Am. J. syphilis, St. Louis, 1927, XI, 116.

This is a class of cases very often overlooked by the physician. Hirshfelder states that syphilitic affections of the heart are more frequent and present a somewhat more definite picture than tuberculosis.

The majority of the patients are in the middle period of life, and the discomfort is attributed to indigestion. There are four outstanding symptoms that frequently give a clue to the real pathology. Patients whose chief complaints are attacks of precordial pain and arrhythmia, who have a low blood pressure and low hemoglobin, a 1-plus or negative Wassermann, are not by any means all syphilitics, but if no definite pathology is found it is well to make a therapeutic test. The mercurials, iodids, and iron are the remedies indicated and should be continued over some period of time. Bismuth salicylate may be indicated if there is a 1 or 2 plus Wassermann.

**Rhythmic cardiac disturbances in syphilitics.**—L. Giroux and L. Erin. Monde méd., Paris, 1924, XXXIV, 200.

Extra systoles of the secondary stage, which have been known the longest in syphilitics, are not always a direct consequence of this disease. They may be due, according to Deguy and Bricout, to a neuropathic condition which has been accentuated. The prognosis is actually favorable, though this may not preclude the possibility of its being a consequence of a slight cardiac involvement. The extrasystoles of the tertiary stage, on the other hand, are syphilitic and may be due to severe lesions of the heart or vessels. There may be myocarditis at the onset and specific aortitis with or without angina pectoris. In other cases the extrasystole appears as a sign of hypertension and is often seen in tabes, either in the beginning or even in the fully developed stages. This is especially true when aortitis exists. Extrasystoles also are found in heredosyphilitics, especially accompanied with aortitis. All these conditions disappear



under mercurial treatment. In making the diagnosis it is necessary to bar all nonsyphilitic organic lesions of the heart, dyspepsia, neurosis, insufficiency of glandular internal secretions.

There are two distinct groups of syphilitic tachycardia, either marked by simple acceleration of the pulse with preservation of the fundamental cardiac rhythm or paroxysms of acceleration with severe disturbances of sinusal rhythm. In simple tachycardia the pulse runs from 100 to 220 constantly. The cardiac beats are regular and preserve their sinusal rhythm. In secondary syphilis the simple tachycardia is frequent. Orthostatic tachycardia and beating of the heart upon exertion is much more frequent in recent syphilis than in normal subjects. It is more common in nervous persons and in females. The rhythm is regained much more slowly than in normals. In secondary syphilis it is the sign of syphilis of the thyroid and then is part of the symptomatology of exophthalmic goiter. The Basedow syndrome is not rare in the later part of the secondary stage. It occurs most frequently in syphilitics who have ulceration of the pharynx, the tonsils, or the palatal roof. Specific treatment has variable influence upon this condition. During the tertiary stage tachycardia is mostly a sign of disturbances of the circulation, myocarditis, or chronic aortitis.

Syphilitic bradycardia may be of two types. It may either involve the ventricles and the auricles without changing the fundamental rhythm or it may involve the valves only and maintain a normal beat. The ventricular bradycardia is often of great importance because it is due to a syphilitic lesion of the His bundle. Total bradycardia, on the other hand, comes on following exertion, emotion, or atropin test. The latter is not infrequent during the secondary stage. In some instances there is a false bradycardia associated with respiratory arrhythmia. It is transient during this time, while in the tertiary stage it becomes important because it suggests severe nervous involvement in many instances. There may be an entire blocking or it may be incomplete and the ventricular contractions changed.

In some instances a fibrous mediastinitis was found at autopsy which had penetrated into the cardiac plexus and the left pneumogastric. In general paralysis it is rather frequent and may be due either to meningoencephalitis or bulbar lesions. The movement of the auricles and ventricles is slower, but the rhythm is not influenced by atropin.

There may be a complete syphilitic arrhythmia with or without organic lesions of the heart and cardiac insufficiency. It may occur in old syphilitics with noncompensated cardiac lesions and a full asystole may be the consequence. It may be a common symptom of cardiac insufficiency. Some remarkable results have been seen fol-



lowing specific treatment. This is true even where considerable lesions of the heart exist.

The syphilitic alternating pulse often can be detected only with functional tests. Often it indicates great severity of the disease.

The remedy of choice in all these cardiac conditions is mercury cyanid. Twelve to 15 intravenous injections are made associated with 2 to 4 gm. potassium iodid per day.

**Early diagnosis of cardiac syphilis.**—W. von Kapff. *Dermat. Wehnschr.*, Leipzig, 1926, LXXXIII, 1544.

Syphilitics very frequently have cardiac discomfort which is not characteristic of the infection. In many instances these patients will develop organic defects in consequence of functional disturbances which arise on account of the consciousness of having contracted syphilis.

There are indefinite stitching pains, restlessness, irregular heart-beats, extra systoles, sinus arrhythmias. These symptoms may be due to a benign nervous condition, but they may be the premonitory symptoms of cardiac disease. Test treatment frequently will decide the diagnosis.

The anatomical lesions are interstitial myocarditis and frequently gummatous neoformations, especially in parts which have the purpose of conducting the stimuli. Then, of course, there are the cases of aortitis. The electrocardiogram will show up complete blocking and cardiac rhythm and the points at which transmission of stimuli is defective. These conditions are seen not only during the tertiary stage—that is, from 5 to 12 years after the infection—but often much sooner, for instance, after 7 months, as in the case of Mackenzie. Frequently there are no subjective complaints, and yet systolic sounds, slight dilatation, and disturbed rhythm may exist.

The transition from purely nervous disturbances to the toxic changes of the disease is not clearly defined. It is most essential that the early stages of cardiac involvement should be diagnosed.

**Some notes on heart disease.**—J. P. Duncan. *S. African med. rec.*, Cape Town, 1926, XXIV, 53.

A study of comparatively recent literature tends to show that scarlet fever and syphilis are not quite so frequently the cause of heart disease as is sometimes thought.

**A review of the syphilitic involvement of the vascular system.**—

Brooks Willmott. *Kentucky med. J.*, Bowling Green, 1925, XXIV, 416.

A review of the literature.

References.



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Acute nephritic congestion secondary to myocardial decompensation is responsible for many so-called cases of uremia.

**Syphilitic endocarditis.**—F. W. Price. Medical society for the study of venereal diseases, meeting February 26, 1926. *Lancet*, London, 1926, I, 496.

Syphilis may attack the aorta, the cardiac valves, the coronary arteries, the myocardium, and the pericardium. Inflammation of the media of the vessels may be followed by necrosis of the elastic tissue and muscle fibers, and, at a later period, by a new formation of fibrous tissue, causing a local weakness of the vessel and the production of an aneurysm. Thickening of the intima is a secondary compensatory process. Fatty and calcareous degeneration are not present in the early stage. Secondary thickening of the intima has been confused with atheroma. The auriculo-ventricular bundle may be involved and cause heart block. Syphilis of the pericardium is very rare. Histologic diagnosis is difficult even in the early stage. Price does not believe that syphilis is the cause of primary atheroma, but it is responsible for a large proportion of cases of aortic incompetence and is an important factor in angina pectoris in patients under 40 years of age. He considers, however, that syphilis as a cause of diseases of the heart has been overrated.

The prognosis is, on the whole, very unfavorable, probably because the diagnosis is not made until the late stage of the disease. In the absence of aortic incompetence it is more favorable. He emphasizes the value of prolonged rest and does not regard the signs of cardiac failure as contraindications to antisiphilitic treatment.

**Endocarditis.**—Thomas Horder. *Lancet*, London, 1926, I, 695; *Brit. med. jour.*, London, 1926, I, 603.

In syphilitic endocarditis the aortic cusps are most often affected, the condition being in most cases part of an aortitis. It is generally held that the mitral cusps are not affected at all by syphilis, but the author has not infrequently noted a well-marked apical systolic bruit in cases of neurosyphilis with no history of rheumatism. The bruit has sometimes been musical, so that it is unlikely that the murmur was due to mere dilatation of the mitral ring. The author is not referring to cases in which an aortic disease is present so that there might be secondary changes at the mitral orifice.

The typical syphilitic lesion of the endocardium is undoubtedly a mesaortitis affecting chiefly the base of the aorta, which includes the sinuses of Valsalva, the roots of the aortic cusps, and the part of the aorta just above these structures.

Most cases occur in men between the ages of 25 and 40. The time of onset is difficult to determine, since syphilis of the aorta may exist for a long time without symptoms, but it is probably from 5 to 10



years after the primary infection. It is not an uncommon disease, and its early recognition is extremely important, since it is doubtful whether resolution can take place once valvulitis has been present.

The author has never satisfied himself that the disease in its curable stage yields demonstrable dilatation of the aorta by physical signs or X-ray examination. He doubts that it is possible to go further in describing the signs of early aortitis than to say that a man below the age of 50, whose arterial tension is not raised, whose blood gives a positive reaction for syphilis, and who complains of pain that may reasonably be attributed to the aorta, is probably suffering from syphilitic aortitis. If his age is under 40 the diagnosis is less uncertain.

**Subacute bacterial endocarditis. A clinical study of thirty cases.**—Walter L. Bierring. *J. Am. med. assoc.*, Chicago, 1926, LXXXVII, 464.

In this clinical study of 30 cases of subacute bacterial endocarditis over a period of five years, the writer discusses the subject under four headings: (1) Etiologic significance of a preexisting valve lesion; (2) types of infection and infective foci; (3) characteristic clinical picture; and (4) prognosis and treatment.

In discussing etiologic significance of a preexisting valve lesion, he states that 20 of the patients in the series gave a previous history of acute rheumatism. Syphilis and scarlet fever and other infections were less frequent, while arteriosclerosis is rare as a basic lesion. Since the World War, trench fever, gonorrhea, and influenza have assumed greater importance in causative influence. Seven of the patients were ex-soldiers.

**Bacterial endocarditis as a sequel to syphilitic valve defect.**—LeRoy H. Briggs. Department of medicine, University of California medical school. *Am. J. med. sc.*, Philadelphia, 1922, CLXIV, 275.

Briggs reports a case of patient suffering from typical syphilitic aortitis. One year later the patient entered the hospital with a non-hemolytic streptococcic endocarditis which pursued the usual course and terminated in death. Necropsy showed involvement of the aortic ring, together with an acute verrucose endocarditis of all the aortic cusps and perforation of one, with an extension into one mitral leaflet.

From a study of the literature, it seems that the sequence of bacterial endocarditis on a syphilitic endocarditis is a decided rarity.

**Acute endocarditis.**—Edward W. Meis. *J. Iowa state med. soc.*, Des Moines, 1925, XV, 136.

“Syphilitic endocarditis is common, especially in the younger and middle ages. It usually affects the aortic valve, may cause a localized



process at the root of the aorta with involvement of the valve, or dilatation of the ring."

Gonococcus endocarditis is rare. Lion and Levi Brule report a case where the gonococcus was cultivated from the heart. Thayer reports three cases in two years. He also states that arthritis may not be present, that the blood culture may be negative, and that cardiac infection may involve both endocardium and myocardium, and occasionally the pericardium. Most cases are fatal.

**Syphilitic pericarditis.**—Ducamp, Gueit, and Pages. Soc. sc. méd. and biol. de Montpellier and Languedoc. méd., November 30, 1923; Bull. méd., Paris, 1924, XXXVII, 52.

A woman 53, who had suffered from syphilis but had not been treated, entered the clinic for Stokes-Adams syndrome with a double mitral lesion. She had attacks of coma.

At autopsy a pericardial citrine exudate, 500 c. c. was found. The water test showed that mitral insufficiency had existed. The aorta was atheromatous and dilated and the valves were intact. The mitral opening was hardly large enough to pass a finger tip. The heart weighed 570 gm. and was sclerosed.

At the level of the interventricular closure histologic lesions were found which have been described by Josué under the name of banalization. The myocardium shows a loss of transverse striation and marked development of connective tissue. On the pericardium nodular inflammation had developed and the vessels were sclerosed.

The involvement of the mitral with integrity of the aortic valve is an exception. This histological finding in the pericardium shows its syphilitic origin.

**Case of heart block due to gumma.**—R. L. Girdwood. Med. jour. S. Africa, Johannesburg, 1921, XVI, 183.

A Wassermann test proved very strongly positive. Finally "a provisional diagnosis of gumma of the heart \* \* \* was arrived at and the patient put upon iodid and inunctions of mercury, but without benefit. The signs of cardiac failure increased, fluid accumulated at the lung bases, the liver and spleen became enlarged, breathlessness increased, cough became troublesome, accompanied by blood-stained frothy sputum. The blood pressure fell to 97 systolic, 44 diastolic. The pulse rate varied between 24 and 32. The patient complained of great weariness and thirst, and death occurred 18 days after the sudden onset of symptoms."

Post-mortem examination confirmed the diagnosis, although the actual presence of the *Treponema pallidum* was not demonstrated.



**Syphilis—A report of two cases.**—William S. Quinland. J. nat. med. assoc., Newark, 1924, XVI, 87.

The first case was a man of 50 years with a history of gonorrhea 15 years and syphilis 20 years previously. He was admitted to hospital because of severe hoarseness and cough. At autopsy an aneurysm of the arch measuring 15 by 13 cm. filled with laminated blood clot was found. It was firmly attached by fibrous adhesions to the sternum, ribs, trachea, and adjacent structures. These adhesions had prevented the usual tracheal tug. The trachea was compressed to a slitlike orifice of about 0.8 cm. There was hypertrophy of the left side of the heart and dilatation of the right. It was pushed downward to the diaphragm and lay in an almost horizontal position. The right lung was compressed upward and backward by the aneurysm and a large accumulation of purulent exudate that filled the chest. A thrombus was found in the pulmonary artery.

The second case was a middle-aged woman from whom no history could be obtained, as she was admitted to the hospital in an unconscious condition and died shortly after admission. Necropsy was performed. The liver presented the general appearance of a healed gumma. There were a number of small lobes. Section showed islands of liver tissues separated by bands of glistening connective tissue. There was congestion of the sinusoids and fibrous thickening of the portal areas. There were extensive areas of fibrous tissue, numerous congested blood vessels, and scattered mononuclear cells. Some of the liver cells contained green pigment. The aorta showed marked scarring of the intima. The depressions were interspersed with yellowish plaques. In the thoracic portion there was attached a thrombus of 1.5 cm.

**Chronic pericarditis. The clinical and experimental aspects.**—John H. Musser and George R. Herrmann. J. Am. med. assoc., Chicago, 1926, LXXXVII, 459.

In analyzing cases of pericarditis, the authors have divided them into four groups: (1) The acute or subacute type of serofibrinous or hemorrhagic pericarditis, (2) the type with complete obliteration of the pericardial cavity, (3) the type with partial obliteration, and (4) that with parietal adhesions only.

With reference to group (3) it is interesting to note that of the 21 patients with partial obliteration of the pericardial cavity, 12 had syphilis, an etiologic agent not generally held responsible for pericardial disease of this particular type.



**The progress of cardiology during 1924. A review of the works of clinicians and investigators in the United States.**—Frederick A. Willius. *Minnesota med.*, St. Paul, 1925, VIII, 230.

Benjamin and Wiedemer, reviewing 61 cases of arterial aneurysm, found that 53 involved the thoracic aorta and 27 the arch. Chief symptoms were pain about the chest, cough, and dyspnea. The Wassermann reaction was positive in 66 per cent and doubtful in 23 per cent. Eighteen improved under treatment. Potassium iodid is the drug of choice in the treatment.

Howard, Ridge, and Willius and Banes are quoted.

**The nature and distribution of the lesions in syphilitic aortitis.**—Willis W. Waite. *Am. J. med. sc.*, Philadelphia, 1927, CLXXIII, 357.

In a series of 300 autopsies, 33 cases of syphilitic aortitis were studied. From this study it was concluded that the aorta may be affected either generally or in localized areas. One portion may suffer severely while the remainder suffers slightly. The ascending portion usually suffers most. The process is one of strangulation necrosis caused by periarteritis and obliterating endarteritis of the vasa vasorum, which starves and destroys the elastic layer. In violent cases the condition travels as a serpiginous ulcer, causes aneurysms and a vegetative growth on the intima which may break off and form emboli. The most usual site of the serpiginous ulcer is in the first portion, due, apparently, to the anatomical structure. The ulcers are due to a sudden cutting off of the blood supply to the area involved.

**On the treatment of syphilis of the aorta.**—H. Schottmüller. *Am. J. syphilis*, St. Louis, 1925, IX, 1.

No other internal organ is so frequently injured by the spirochete as the aorta. Fraenkel found pathologic changes in the aorta in 50 per cent of all cases of late syphilis. Stadler found that in 211 cases of constitutional syphilis 82 per cent had typical syphilitic aortitis. Of the 211 patients, 117 died of aortic disease. The author's experience indicates a still greater percentage of aortic involvement.

Types of aortitis are differentiated into three classes—aortitis supracoronaria, which affords the most favorable prognosis; aortitis coronaria, which is often amenable to treatment; and aortitis valvularis, which can be cured only if treated in the early stages.

It is not justifiable to institute intensive salvarsan treatment in every case of syphilitic aortitis; it is necessary to determine whether the condition involves other organs. Especially should intensive treatment be avoided if acute meningeal symptoms are present. Mercury treatment is indicated for the first four or six weeks; then



neosalvarsan. Routine of treatment is outlined. Experience has shown that intensive and long-continued treatment of syphilitic disease of the aorta is valuable. Experience also has shown the necessity of giving consideration to even the slightest manifestations of the heart or of the vascular system. This applies particularly to patients of advanced age; even though the Wassermann reaction be negative, every possible diagnostic aid should be employed to make an early diagnosis.

**Cardiovascular syphilis.**—Lawrence E. Hines. Med. clin. North America, Philadelphia, 1924, VIII, 559.

History of case which is an example of the common type of syphilis of the aorta. The disease progressed in spite of the antisyphilitic treatment. Retrosternal pain was the most persistent and distressing symptom.

*Treponema pallidum* was found in Levaditi-stained sections of the myocardium.

**Diseases of the heart: A clinic.**—Arthur D. Dunn. Nebraska state med. J., Norfolk, 1925, X, 1.

*Syphilitic aortitis; aortic insufficiency.*—Man, having tabes dorsalis, showed first symptom, shortness of breath, of heart complication eight months previously. There was swelling of the "stomach" and of the legs, cough, and easy fatiguability. Patient described a peculiar type of breathing when going to sleep which suggests the Cheyne-Stokes type. There is violent arterial pulsation in the neck. Breathing in sitting position is fairly easy.

On examination the heart was found enlarged, the aorta dilated. At the apex there was a slight systolic blow and a diastolic murmur which is practically pathognomonic of aortic insufficiency. The relationship of syphilis to the diseases of the aortic valves is important—probably 80 to 90 per cent of aortic insufficiencies occurring in individuals between 25 and 50 are specific in origin.

Aneurysm could not be demonstrated.

In this case one of two possibilities must be assumed. Either the absence of resiliency in the aorta is the cause of the heart failure or there is a definite syphilitic myocarditis. It is most probable that the bulk of the lesion is in the myocardium. Antisyphilitic therapy should be energetic; it is in such cases that prolonged intensive treatment is most valuable.

**Specific aortitis.**—William D. Reid. Boston med. & Surg. J., 1920, CLXXXIII, 67 and 105.

At the Massachusetts General Hospital, 54 autopsies since January 28, 1909, when the first demonstration occurred, have shown syphilitic disease of the aorta. Up to August, 1919, there have been 105



patients treated for syphilitic aortitis in the out-patient department. In this paper the author discusses data from both groups. Aortitis is found in from 3.5 to 7 per cent in general autopsies; in syphilitic autopsies it runs from 67.4 to 85 per cent. This trouble was mentioned in 1724 as having a venereal origin; it was not definitely described until 1885 by Dohle. The spirochete was first found in the aortic wall in 1906. Warthin's startling figures of 88 per cent of aortitis in one-third of all autopsies performed on adults at the University of Michigan, is the latest report. There is a nonsyphilitic aortitis which follows several infectious diseases. The specific form has been known to follow infection in six months, in one known case, two months, or at longest known, 33 years; 16 years is the average at Massachusetts General; perhaps 10 or more years is the more frequent. Albutt says it attacks men compared with women in a ratio of 3 to 1. Incidence of acquired infection is between 35 and 50 years; congenital cases 15 to 20 years. Laborious and athletic pursuits are important determinants. Gives a detailed description of normal anatomy of the aorta and the aorta in disease; notes one unmistakable case of aortic stenosis in syphilis—very rare. It may be that a complication such as scarlet fever had preceded the syphilis. Describes the pathologic condition at length. The Wassermann reaction varies and is frequently negative. The Röntgen-ray findings are very helpful in diagnosis. Diagnosis is difficult in early and in latent type. Differentiation between specific and nonspecific aortitis. Nonsyphilitic is rare. Prognosis for the specific form is grave; for the nonspecific brighter. Intensive antisyphilitic treatment indicated. In doubt, author advises a therapeutic test. Cardiac cases, of course, require special care. The therapeutic test should be more readily resorted to.

**Pathologic anatomy of syphilitic aortitis.**—E. Krüger. *Dermat. Wehnschr.*, Leipzig, 1924, LXXIX, 1141.

The autopsies made between 1919 and 1923 at the Hamburg harbor hospital were studied in regard to arteriosclerosis and syphilitic aortitis. In a table including 150 cases of arteriosclerosis seen in 1923 it is shown that the greatest number is found in the sixth and seventh decades of life and more frequently among men than women. In aortic disease in middle and younger years syphilis must be taken into consideration. A table including 142 cases of syphilitic aortitis collected in five years among 2,708 autopsies showed the largest number in the fifth and sixth decades. The number found in the fourth decade was larger than that found in the seventh decade, the reverse of which is seen in arteriosclerosis. Cases occurring in the second and third decade were always harmless and not fatal. The



number of autopsies showing syphilitic aortitis was greater than that for arteriosclerosis, both in men and in women.

In syphilitic aortitis the entire wall is thickened, and in typical cases there are elevations shining like porcelain and hard as cartilage. In rare instances there are punched-out portions. In later stages of the disease the vessels are greatly dilated and tough. Arteriosclerosis is often found with syphilitic aortitis. The syphilitic changes appear in foci and start in the thoracic aorta, generally immediately above the aortic valves. Aneurysm is a dangerous complication of syphilitic aortitis. It was seen in 18 per cent of the above cases (27 cases). A weakening of the aortic wall is produced by syphilitic granulations and necrosis.

**The mode of death in various types of heart disease.**—Frederick A. Willius. *Am. J. med. sc.*, Philadelphia, 1926, CLXXI, 480.

In 330 cases in which death occurred as the direct result of cardiac disease there were 28 cases of cardiovascular syphilis—25 male and 3 female. In 10 cases of thoracic aneurysm, 8 died suddenly from rupture of the aneurysm. Five were in the sixth decade of life. The arch was involved in 7 cases, the ascending aorta in 2, and the descending aorta in 1. There were 5 cases of the fusiform type, 3 of the saccular type, 1 fusiform and saccular, and 1 dissecting type.

Eighteen patients died from syphilitic aortitis—16 males and 2 females. Ten cases occurred in the fifth decade of life. Eight patients died suddenly, 3 had marked stenosis of the coronary orifices, 1 had thrombosis of the mesenteric artery, none had auricular fibrillation.

**Frequency of positive blood Wassermann, or syphilitic aortitis in older people.**—F. Port. *München. med. Wchnschr.*, Munich, 1924, LXXI, 712.

The statistics (Stadler. *Die Klinik der syphilitischen Aorten-erkrankungen*, Jena, 1912) from the Leipzig clinic and von Eich from the Düsseldorf pathologic institute show that most deaths from specific aortitis occur between the ages of 40 and 49. But they also show that syphilitic aortic changes are frequent between 60 and 70.

Under the economically unfavorable postwar conditions, the author saw syphilitic involvement in many old people. Among 202 dying in 1923, 83 (41 per cent) over 60 years of age at autopsy showed syphilitic aortic changes. Of this group 11 were more than 70 years of age and 1 of them 87. Among 32 dying between 50 and 59, there were only 2 of aortic syphilis (6.2 per cent). Among 19 dying between 40 and 49, there were 4 (21 per cent). By no means all cases of syphilitic mesaortitis recovered spontaneously, as Stadler says. The process may become aggravated under unfavorable condi-



tions in later years. In 12 among 18 seen at autopsy a positive Wassermann reaction had been found during lifetime.

In the municipal hospital at Augsburg, 20.8 per cent of all patients at the internal clinic above the age of 60 and 22.7 per cent of those between 50 and 59 had a positive Wassermann reaction. Romberg in his clinic found only 10 per cent among 6,850 in two and one-half years. Among 18 cases of aortitis in 1923, 9 (50 per cent) were diagnosed during life. Romberg found 198 cases of syphilitic aortitis among 1,585 syphilitic patients (13.3 per cent), but among these were all stages and ages.

The author reaches the conclusion that syphilitic aortitis exists in all patients over 50 who have a positive Wassermann reaction.

In a great number of these patients between 50 and 59 there were more nervous symptoms than cardiac involvement. Above 60 the reverse was the case. Among 29 patients over 60 there were 2 with definite symptoms of tabes, 3 of progressive paralysis, and 1 of cerebral syphilis who showed no cardiac changes.

A bruit at the heart was the most frequent finding (11 among 19). Twelve among 24 had changes of the heart and nervous system. Broadening of the heart sound to the left was not generally found.

**Syphilitic aortitis.**—Chauffard. *L'Action méd.*, 1923, X, 197.

The aorta of every old syphilitic should be examined. In old tabetics aortic lesions are habitual. Welsch among 56 syphilis cases found 34 with aortic lesions (61 per cent). Etienne, of Nancy, collecting various statistics, found 211 cases of syphilis in 412 case reports of aortitis (50 per cent). Joltrain found 60 per cent. Where the Bordet-Wassermann test is made the number increases. Among simple aortitis without aneurysm, 82 per cent have been found to be syphilitic. Heitz speaks of conjugal aortitis. In these instances syphilis probably exists. Etienne has found 93 per cent of aneurysm in syphilitics.

Endarteritis is the basic condition of syphilitic arteritis. Fibrinous coagulation also takes place. The middle layer of the aorta becomes overelastic and arterial dilation is the consequence. Generally a cylindrical segment is dilated or sigmoid insufficiency exists. In some instances the arterial wall gives way entirely. The outer layer becomes sclerous and gummatous. In it fibrosis and necrotic patches develop. Often giant cells are seen.

The most marked symptom in aortitis is pain which may be aggravated to an extent that will produce angina pectoris.

If an aneurysmal pouch has formed and becomes superficial, it may be felt under the palpating hand. The aortic arch may move upward and with it a subclavicular elevation will develop. Dullness of the vascular course may extend over a cylindrical area. Radiologic in-



spection often shows a slighter dilation than is found under the palpating hand. Often a shadow is seen at the base of the aorta. In many instances the syphilitic aorta is not dilated, but appears more opaque than usual. Two pictures must be taken, one frontal and one anterior right oblique. Often the radiologic examination will reveal periaortitis or superior mediastinitis. One of the greatest dangers of aneurysm is the periaortitis. Three cases are reported—one of the aortic aneurysm with compression of the recurrens, paralysis of the laryngeal muscles, and discord of voice. The last symptom is found in ganglionic compression or compression of the left auricle. One-tenth of the cases are syphilitic. The second case was that of compression of the pneumogastric trunk with whooping cough. The third case had a barking cough from tracheo-bronchial compression. Generally this signifies that the compressed bronchus adheres to the aneurysm.

Up to 10 years ago the treatment in vogue was avoidance of breakage of the aneurysmal wall, for which purpose gelatin was given either subcutaneously or by mouth. The therapy is directed to the embryonic foci and neither to the sclerogummatous or the cellular disintegration. Specific treatment has been used. This does not exclude the application of gelatin. The periarteritis is the progressing condition and must therefore be arrested.

Bismuth has given good results.

**Syphilitic aortic insufficiency.**—R. W. Scott. *Arch. int. med.*, Chicago, 1924, XXXIV, 645.

Syphilis of the aortic orifice is the most common cause of aortic insufficiency in adults. Its association with syphilis of the aorta itself is so close it is not necessary to consider the pathology separately. Whether the aortic leaflets are ever primarily and exclusively attacked by syphilis, true syphilitic endocarditis, is a question.

A series of 25 cases was observed clinically, and the diagnosis confirmed by post-mortem examination. There were 24 men and 1 woman, the ages ranging from 30 to 64 years, the average for the group being 40 years. The anatomic changes found in all cases were: (1) Syphilitic mesaortitis with extension of the process to the aortic area, causing insufficiency at the orifice, and (2) hypertrophy and some degree of dilatation of the heart, chiefly of the left ventricle.

One case in four had some grade of coronary occlusion. It was suggested that the progressive widening of the aortic orifice, either from leaflet involvement or ring dilatation, and occlusion of the coronary arteries, are the chief factors responsible for the relatively short duration and uninterrupted progression of the heart failure observed in these patients. The histologic changes in the heart



muscle were similar to those frequently seen in hypertrophied hearts from other causes. To attribute these changes to latent myocardial syphilis seems unwarranted by the evidence afforded by this series of cases.

**Syphilis and pectoral angina of exertion according to 450 observations.**—L. Gallavardin. *Presse méd.*, Paris, 1924, XXXII, 598.

The effort syndrome was studied in 450 cases; 21 per cent had established syphilis, and in an additional 9 per cent it possibly existed. There was then practically a specific etiology in 30 per cent. Among the cases of angina pectoris with aortic lesions a syphilitic history was found in 88 per cent. It always occurs in cases associated with aortic aneurysm. In cases of angina pectoris without aortic lesions there are 20 per cent. Angina pectoris is found the more often the earlier this disease begins, 44 per cent under 40 years of age, 24 per cent between 40 and 50, 17 per cent in those older than 50.

The author states that angina pectoris can not, however, be considered a syphilitic stigma.

**Relations of syphilis and arteriosclerosis of the aorta.**—P. Poletti. *Cultura med. mod.*, Palermo, 1925, IV, 33.

In 1895 Döhle described aortitis with a lack of regression but atheromatous changes, and calcification in the intima. Heller, in 1899, called syphilitic aortitis a mesoarteritis and stated that considerable changes were found in the media, and in 1903 Chiari discussed the tendency of the intima toward regressive changes. He said that aortitis was found in confirmed syphilitics and general paralytics. Benda found organized sclerosis in the intima with elastic fiber neoformation. Fahr examined 152 aortas mainly from established syphilitics and reached the conclusion that often inflammatory changes of the aorta consist of small areas of infiltration within the vasa vasorum with a tendency to disintegration of the media and destruction of this tissue. Foa considered the thickening in the intima real scar tissue. There are very few foci of softening and ulceration or of calcification which constitute regressive changes differentiating the syphilitic aortitis from atheromatous lesions of the aorta. Cesa-Bianchi believed that mixed aortitis was possible. Several authors have expressed the opinion that syphilis is capable of producing arteriosclerosis, and others have believed that there may be a coexistence of the two conditions which would depend upon the presence of calcium and fat.

Arteriosclerosis comprises mucous degeneration, fatty and calcareous infiltration, hyalin deposits in the intima, and proliferation of superficial strata of the covering. Hueck believes that fat does not always constitute degeneration and that it may be found where



there is no arteriosclerosis. The author is of the opinion that these changes may be due to syphilitic granuloma in the vessel walls.

The author examined a case after death where he found necrotic foci with granular and atheromatous degeneration in the deeper strata of the intima. The lesion was circumscribed and the rest of the aorta was exempt. The external layers of the intima showed fatty and mucoid degeneration which suggested a simultaneous arteriosclerosis. The elastic fibers extended into the deeper layers of the intima. The author concludes that the degenerative processes were of a secondary syphilitic nature.

**Aortitis.**—George S. Bel. *Med. J. & rec.*, New York, 1924, CXX, 533.

Due to the work of Reuta, Benda, Wright, Warthin, Longcope, and others, syphilis is recognized as the chief if not the sole cause of aortic aneurysm. The fact that it is the media that is attacked by the treponema, while the intima is affected by other organisms, accounts for the few aneurysms that follow other than syphilitic aortitis. Syphilitic aortitis begins as a perivascular infiltration about the vasa vasorum, the sole means of nourishment to the outer muscular coat of the aorta. Occlusion of the vessels follows, depriving the muscular coat of its nourishment, with resulting degeneration and bulging or aneurysmal dilatation. The aneurysm varies from a slight depression to a large sac, increasing in size as long as the treponemata are not destroyed.

The common symptoms are pain, dyspnea, palpitation, and tachycardia. Pain is especially typical of syphilitic aortitis. Physical findings in the early stages before the aorta has undergone much pathologic change are practically negative. Later, the dilatation may be detected by abnormal pulsation in the subclavian and carotid arteries and in the episternal notch. Still later there is a heave beneath the manubrium or a pulsation in the first and second interspaces, usually to the right of the sternum, but occasionally to the left. There is slight dullness, the aortic second sound is sharp, ringing, bell-like, and there is often a systolic murmur at the aortic area.

With early antisyphilitic treatment the process of the aortitis may be stayed and an aneurysm prevented. Salvarsan may be given in full doses to some cases, but mercury is the most valuable remedy. It should be administered by needle or inunction in courses of 28 doses and supplemented by iodid of potassium in increasing doses.

**Syphilitic aortic endocarditis in syphilitic aortitis.**—L. Gallayardin.

*La Médecine*, Paris, 1923, IV, 419.

A case is given to show that in syphilitic aortitis aortic insufficiency can in exceptional cases have for its cause a direct lesion of the aortic valves; clinically the signs of aortic stricture may then be predominant.



**Syphilitic aortitis.**—Frederick A. Willius and Arlie R. Barnes, Mayo Clinic. *Minnesota med.*, St. Paul, 1924, VII, 227.

An arbitrary classification has been adopted, dividing cases into early, moderately advanced, and advanced stages. The early stage comprises cases in which the characteristic signs, such as cardiac enlargement, murmurs, vascular phenomena of aortic regurgitation, and dilatation of the aorta, are lacking. In these cases the characteristic finding is a peculiar tambourlike accentuation of the aortic second tone. This is usually quite well localized to the aortic area, but at times is heard to the left of the upper sternum.

The primary involvement of the aorta occurs in the adventitia and media. It is, therefore, readily understood that the alterations in the elasticity or resilience of the aorta occur not only through fibrous changes in the adventitia but by cohesion of the aorta to contiguous structures. This diminution in the elasticity of the aortic wall in the presence of a competent aortic valve necessarily increases the resistance against the inrush of blood from the heart, which in turn increases the intraaortic tension and causes rather forcible closure of the semilunar leaflets. This peculiar tympanitic accentuation of the aortic second tone, in conjunction with other evidence of syphilis, justifies the diagnosis of early syphilitic aortitis.

In 10 patients in the early stage of the disease the blood Wassermann tests of 9 were positive. Three had associated syphilitic lesions; 1 had syphilis of the central nervous system with positive spinal fluid; 1 had osseous syphilis; and the patient having the negative blood Wassermann reaction had typical cutaneous syphilis. Electrocardiography is of little diagnostic value in these early cases; in only one were there alterations in the graphs. This patient had angina pectoris.

Patients classified in the moderately advanced stage are those whose examination revealed systolic murmur, usually quite well localized to the aortic area, rough and reverberant in character, and frequently transmitted into the carotids. In half the cases the aortic second tone was accentuated, but did not have the peculiar tambourlike quality. The systolic murmur is probably due to the intimal roughening indicative of moderately advanced aortic syphilis.

Six of the 30 patients had no complaints referable to the cardiovascular system; 13 had varying degrees of dyspnea, palpitation, and other indications of inefficient heart; and 11 had angina pectoris.

In three cases only did the Röntgenograms reveal even slight to moderate dilatation of the aorta, while in many cardiac enlargement was noted.

In 15 blood Wassermann tests were strongly positive, in 12 negative, and in 3 not recorded. The spinal fluids of 6 patients were positive; of these 3 had negative blood Wassermann reactions.



The electrocardiograms of only three patients revealed significant abnormalities; two had angina pectoris, and the third a severe attack of paroxysmal dyspnea.

One hundred patients whose syphilitic aortitis had progressed to the development of aortic regurgitation were classified as being in the advanced stages. Sixty-three had dyspnea and palpitation and 37 had angina pectoris. Aortic regurgitation occurs either from cicatricial deformity of the aortic ring or valve leaflets, or from dilatation of the ring from the associated involvement of the aorta itself. Failure of the valves to approximate is responsible for the loss of the accentuation of the aortic second tone. Occasionally the second tone is accentuated, the result probably of sclerotic changes of the valves favoring sound production. Röntgenograms revealed aortic dilatation in 18 patients; in 6 it was aneurysmal.

Blood Wassermann reactions were strongly positive in 72 patients, negative in 25, not recorded in 3. Spinal fluid of only 55 was studied; syphilis was indicated in 18, negative in 37. Two with negative blood Wassermann had positive spinal fluid. Associated syphilitic lesions were present in 24; of these, 23 had syphilis of the nervous system and 1 a tertiary lesion of the mucous membrane.

The electrocardiograms of 34 revealed significant changes; of these, 18 had angina pectoris. One patient had auricular fibrillation.

The frequency of atypical pain in syphilitic aortitis emphasizes the importance of careful questioning in obtaining histories of diagnostic value.

It is important to realize that a long period elapses from the appearance of the primary lesion to the onset of symptoms of aortitis. In cases studied the average time was 19½ years.

From this study it is demonstrated that neither Wassermann reaction nor Röntgenography is infallible in the recognition of aortic syphilis; there was no instance, however, in which physical diagnosis failed to reveal evidence of the disease. Electrocardiography is helpful only in corroborating advanced disease of the aorta, especially when cicatricial fibrosis has involved the coronary orifices.

Prognosis in the advanced stage is poor; the damage is so marked in some cases that progression occurs in spite of rigid treatment, and when treatment is effective in controlling the syphilitic process the resulting reparative fibrosis produces deformity leading to progressive cardiovascular impairment.

#### DISCUSSION

John H. Stokes agrees with Willius that physical signs are the first aids to diagnosis in early syphilitic aortitis. Accentuation of these signs, and even apparent progress of the lesion, may take place



in treating this stage of the disease. Such signs are indications that the process is arrested.

Treatment with mercury and iodid for weeks, followed by arsphenamin in early cases without marked coronary sclerosis or myocardial degeneration yields excellent results.

Henry L. Ulrich states that cases in the cardiac group, when there is decompensation, rarely recur.

Edward L. Tuohy says that in the second group (moderately advanced) systolic murmurs should be carefully studied, because systolic aortic murmurs are usually due to the intimal atheroma, and this intimal induration has nothing to do with syphilis.

C. N. Hensel agrees that the diagnosis of the very early case is of the utmost importance.

**The early diagnosis of syphilitic aortitis.**—Jos. Kopecky. Texas state J. med., Fort Worth, 1926, XXII, 205.

Early recognition and proper management of syphilitic aortitis constitutes the preventive treatment of syphilitic coronary occlusion, aortic incompetence, and aortic aneurysm. Even this course will fail in some syphilitics, but in a large proportion of cases it will check the progress of the disease and prevent aortic lesions notoriously hopeless when once established.

The known facts pertinent to this discussion are:

1. Syphilitic heart disease usually starts in the aorta.
2. The spirochetes reach the aorta through the perivascular lymphatics of the vasa vasorum early during the stage of general dissemination of the disease through the body; the aortitis usually becomes manifest from 15 to 25 years later, but may appear as early as three months or as late as 40 years after the primary lesion.
3. \* \* \*
4. The syphilitic process appears earliest and most often just above the aortic ring.

**Progress in the study and treatment of cardiovascular disease in 1924.**—Howard B. Sprague. Boston med. & surg. J., 1925, CXCII, 799.

Review of literature for 1924.

**Syphilis of the blood vessels.**—C. Sternberg. Wien. klin. Wchnschr. Vienna, 1926, XXXIX, 5.

Heller gave a macroscopic and microscopic description of syphilitic aortitis; Chiari described primary productive mesaortitis distinguishing it from common endarteritis of the aorta. In Chiari's material of 27, there were 16 with syphilitic aortitis. In 20 other cases where syphilis was not demonstrable but 14 of whom had had general paralysis, Chiari postulated that syphilis was the cause of



mesaortitis. The syphilitic nature of mesaortitis was definitely established when *Spirochaeta pallida* were found in the aortic wall and the Wassermann reaction was generally found positive.

Branched fissures and folds are found in the aortic wall. There are radiating scars and notches where the wall is very thin. The intervening thickened portions are white or bluish white. Generally the ascending aorta is involved, the condition stopping abruptly at the arch. Sometimes the entire vessels are inflamed or foci or bands above the valves. Sometimes the descending aorta is involved, the condition stopping short of the diaphragm. Cuffs are found around the ostia and the coronary arteries of the heart. Often this condition is associated with nonspecific arteriosclerosis, with foci of fatty degeneration and calcification of the intima of the aorta.

When the valves are drawn into the pathologic process the closure becomes insufficient; decompensation is very common in syphilitic mesaortitis, while it is rare in arteriosclerosis. Stenosis of the coronary ostia plays an important part in angina pectoris. The opinion of many writers is that mesaortitis is found in 25 per cent of syphilitic patients. The writer does not think that all aneurysms are syphilitic though most of them probably are.

**Syphilis of the heart and aorta.**—Thomas Horder. Medical society for the study of venereal diseases, meeting February 26, 1926. *Lancet*, London, 1926, I, 496.

Post-mortem findings indicate that the thoracic aorta is more often attacked in the early stages of syphilis than the heart itself. When the structures near the heart are involved the two zones most liable to attack are the circle of Willis and its branches, and the base of aorta and the part immediately above it. This invasion usually takes place from 5 to 10 years after the primary infection. The author has seen these manifestations more often between the ages of 25 to 30 than between the ages 30 to 40. The later developments are aneurysm and aortic regurgitation.

He states that he never feels quite certain of his diagnosis of syphilitic aortitis, but insists that the safe course is to treat the patient as a syphilitic suspect. He attaches great importance to substernal pain. In none of his cases has he felt sure that the aorta was dilated. Syphilitic mesaortitis is a patchy condition; if it is so diffuse as to lead to dilatation in a patient aged 30 or 40 years it will be so serious that the examination will probably be made at autopsy. In all cases in which there is substernal pain any aortic second sound should be carefully criticized and a blurring or lack of clearness regarded seriously. He finds that an aortic bruit can sometimes be heard in the xiphoid region and nowhere else.



Early involvement of the heart is less commonly detected than of the aorta, partly because there is no pain. There may be a sudden rupture of an aneurysm in the heart wall, or an ischemic infarct might result from endarteritis of the branches of the coronary vessels. The so-called heart-block syndrome is the one suggestive sign. If it is present in a person under 50 there is always hope that treatment will be effective.

Intensive treatment with mercury is begun promptly, potassium iodid being given at the same time. This is followed by routine treatment with arsphenamin. Once the treatment is started the same dosage is given as in other cases of syphilis.

**Syphilis of the heart and aorta.**—Frederick W. Price. *Lancet*, London, 1926, II, 61.

In syphilis of the coronary arteries the aorta is usually simultaneously involved. Sudden death may occur from closure of the orifice or of the trunk, or one of the main branches of the coronary artery. Fibrosis of the myocardium may be the result of coronary disease or gummata. Auriculoventricular heart-block may occur. Small gummata, when treated early, respond to adequate therapy, except when fibrosis has developed.

There is no evidence that syphilis is a cause of primary chronic endocarditis of the cardiac valves. There may be a secondary fibrosis, and there is no doubt that syphilis may give rise to a chronic primary inflammation and it would appear that congenital syphilis does so in the myocardium.

Primary atheroma, according to the author's opinion, is not caused by syphilis. Syphilis, however, is a cause of many of the cases of aortic incompetence, and an important factor in an angina, especially under the age of 40.

The author rejects statistics which make syphilis responsible for from a quarter to a third of all cases of organic heart disease, three quarters of all cases of aortic regurgitation, and for all cases of aortic incompetence, in which there is no definite history of acute rheumatism.

Pain is the most frequent and characteristic symptom of aortitis. It is situated behind the upper part of the sternum, in some instances radiating to the arms and neck. It may be intense, or only constitute slight discomfort. Sometimes there are paroxysms of pain, and a feeling of suffocation. The pain may come on upon exertion or when lying down. It may disappear spontaneously or as a result of treatment. Tachycardia is often marked.

Pulsation may be felt in the neck, especially in the suprasternal notch, and in the first and second intercostal spaces on either side. There may be an impairment of the percussion note over the manu-



brium and on either side of it. The second sound may be bell-like or clanging. The Röntgen ray may show diminished translucency of the aorta and increase of its diameter. Occasionally there is alteration in the voice and tracheal tugging. Later the clinical picture of aortic incompetence or of myocarditis or saccular aneurysm may develop.

A large group of these patients presents symptoms of systemic anemia, giddiness, syncope, or fainting attacks, fatigue on mental exertion, or sleeplessness and headache. Cardiac asthma is comparatively frequent. The author emphasizes the importance of early detection of the presence of a diastolic murmur over the base of the heart, about the sternum, and at the apex. Subacute bacterial endocarditis may supervene. Exacerbations of the disease may occur at any time. The clinical picture may be that of acute general cardiac failure. All diagnostic means should be employed, and it should not be forgotten that an early rheumatic infection may be easily overlooked.

**Aneurysm.**—Section of medicine of the Royal Academy of Medicine in Ireland, meeting May, 1925. *Brit. med. jour.*, London, 1925, I, 928.

H. C. Drury remarked on the small number of cases of aneurysm found in patients under 30 years of age, asking if these were marked out as being syphilitic.

T. G. Moorhead commented on the fact that while 37 cases of aneurysm were found among the 600 cases that were examined in Dublin, only 6 cases were found among 300 similar cases examined in Glasgow. In his experience nearly every patient with a genuine aneurysm had a positive Wassermann reaction.

V. M. Synge had never seen a case of typical saccular aneurysm due to syphilis in which the Wassermann reaction had been negative.

**An aneurysm and a gumma in the same heart.**—W. A. Young. *Trans. roy. soc. trop. med. and hyg.*, 1925, XIX, 87; *Trop. dis. bull.*, London, 1925, XXII, 982.

In this case, from Accra, an African youth of 24, still at school and regarded as healthy though not very strong, suddenly expired at night. His heart, which was found to be much enlarged and to weigh 20½ ounces, had the left ventricular wall occupied by an aneurysm and a gumma. The liver also was studded with small gummata.

The author refers to three cases of endarteritis reported from Accra, by Macfie and Ingram (*Trop. dis. bull.*, vol. 17, p. 422), where the patients were boys, in one of whom, though only 6 years old, gummalike tissue suggestive of a syphilitic causation was found.



**Syphilis of the heart and aorta.**—James B. Herrick. Pacific northwest medical association, meeting June, 1925. Northwest med., Seattle, 1925, XXIV, 458.

The disease affects the aortic valve, obstructs the coronary arteries, and the aorta is subject to the full aortic output of the heart and yields to dilatation. Anginal symptoms are also frequent. The walls of the vessel are invaded through the vasa vasorum. While it is generally a late manifestation of syphilis, it may develop as early as three or four years after the chancre.

A diastolic murmur over the base of the heart in the absence of rheumatic chorea and of any other valvular lesion in the young individual can be assumed to be syphilis with endocardial lesion. Aortic valvular involvement is not essentially the involvement in syphilis of the aorta; usually it is found 1 to 1½ inches above the aortic valve. The accentuated aortic second sound in syphilitic aortitis is sharp and metallic. This is often the only sign.

Early recognition and early treatment are important in preventing serious complications. Free dispensaries must in the following years show benefits in the decreased number of cases of aortitis, aortic regurgitation, etc. Small initial doses of mercury and potassium iodid, with gradual increase, then small doses of arsphenamin, constitute the best treatment.

**The prevention of cardiovascular syphilis.**—William D. Reid. Am. J. syphilis, St. Louis, 1924, VIII, 609.

Early diagnosis and continued treatment of every case of syphilis are necessary. Examination of the circulatory system of each patient is essential, and no patient with a known or suspected cardiovascular syphilis should be allowed to discontinue treatment until the physician states that he is ready to be discharged.

The author makes a plea for the use of terms in diagnosis which clearly indicate the etiology of the disease.

**Paroxysmal tachycardia with special reference to prognosis.**—

Frederick A. Willius and Arlie R. Barnes, Mayo Clinic. Boston med. and surg. J., 1924, CXCI, 666.

In 102 cases 44 were without associated diseases. Five cases had syphilis. Exophthalmic goiter was found most frequently, there being 16 cases. Of the heart lesions, there were two cases of syphilitic aortitis, one with aortic regurgitation. One of these was a man, aged 62 years, who had had attacks of vertigo for four years, accompanying seizures of tachycardia. Radial pulse could not be obtained, collateral circulation was well established, and there was marked peripheral arteriosclerosis. During an attack the pulse rate was 160, and an electrocardiogram identified the paroxysm as a nodal tachycardia with a P-R interval of zero and a rate of 150 per minute.



**On the etiology of aortic regurgitation.**—I. M. Harmer. *Heart*, London, 1926, XII, 371.

An examination of 467 dispensary patients was made to determine the relative importance of syphilis and rheumatism in the etiology of aortic disease at different periods of life. It was found that 37.3 per cent of all cases of aortic regurgitation between 20 and 70 years of age showed a positive Wassermann. Rheumatism was found in 27.2 per cent.

Fifty per cent of all uncomplicated cases are syphilitic in origin and 17.4 per cent rheumatic; between 20 and 35 years of age, 44 per cent are rheumatic in origin and 10.7 per cent syphilitic, while over 40 years of age only 5.2 per cent are rheumatic and 71.3 per cent syphilitic.

In aortic stenosis with regurgitation syphilis accounts for only 20 per cent and rheumatism for 13.4 per cent of the cases.

**Chronic aortitis.**—D. Foucart. *Med. press and circular*, London, 1925, CXX, 282.

In 90 per cent of cases, whether the Wassermann reaction is positive or negative, the cause is syphilis. Treatment should consist of the administration of small doses of arsenical salts—15 cg. to begin with with a total of 2.5 gr. In the intervals biniodid should be employed for injections. In aortitis with marked thickening of the walls potassium iodid should be used.

Should there be cardiac insufficiency before specific treatment is given the myocardium must be reinforced. The proportion of urea in the blood and the permeability of the kidneys must be determined also before treatment is instituted.

**Clinical and therapeutic aspect of syphilitic mesaortitis.**—G. Spengler. *Med. Klin.*, Berlin, 1924, XX, 1137.

Syphilitic disease of the aorta is the cause of a large proportion of heart disease. Subjective symptoms, however, may develop late.

Since the war the author has seen 84 cases (52 men, 32 women). This coincides with the ratio of men to women given by Huber and by Korczynski. The author argues that the larger number of syphilitic infections in men must be due to the greater strain on the circulation from physical and mental work, from alcohol, nicotin, and coffee abuse by men. The disease is more frequent during the fourth decade in women, while during the sixth and seventh it is more frequent in men. Donath found mesaortitis most frequently between 50 and 60.

The shortest interval between the infection and the first aortic symptoms was 7 years and the longest 39 years. Deneke gives 20 years' interval, Romberg 22 years, Korczynski from 1 to 27 years, Schrumph 10 years, and Huber 15 to 25 years. Probably, however,



the involvement of the circulatory system occurs sooner. It may be that it starts during the secondary stage.

Marked rash was not mentioned in the histories of the author's patient with mesaortitis. The Wassermann reaction is generally positive. In the author's cases it was positive in 87 per cent, in Deneke's in 86.5 per cent, in Huber's in 85 per cent, in Brandenburg's in 70 per cent, in Schrumpf's in 58 per cent.

Nerve involvement is very rare in these mesaortic patients. In the author's material it occurred in 14.5 per cent, among Huber's and Goldscheider's patients in 25 per cent, and in Deneke's in 30 per cent. On the other hand, Frisch found complications in the aorta in 45 of 115 cases of neurosyphilis. Two patients only of this group had subjective symptoms. Generally tabes becomes manifest much sooner than the heart involvement. One patient with aortic valvular insufficiency had no subjective symptoms. Löwenberg found 33 per cent aortic involvement in neurosyphilis. In neurosyphilis cardiac disease forms a dangerous complication.

Subjective symptoms of mesaortitis are dependent on the site of the vascular wall changes and their extent. Dull pressure is felt behind the upper portion of the sternum upon physical exertion. This condition in young persons must attract attention to aortic syphilis. R. Schmidt gives a marked sensitiveness to pressure in the left brachial plexus as a symptom associated with aortic disease. Gerber found paresthesia of the neck and weakness in the left arm as early symptoms. Often these symptoms persist while the patient is at rest. Cold weather and copious meals aggravate aortalgia. According to R. Schmidt, these symptoms arise in the sympathetic nerves surrounding the aorta, and a similar condition is seen in cases of angina pectoris. Often patients complain of a dull pain in the gastric region, especially upon movement. Palpitation is not generally complained of in the beginning. Although insufficiency of the aortic valves exists in many cases, the symptoms are not intense until compensation is disturbed. Then fully developed angina pectoris may suddenly appear. Often pressure is followed by burning and lancinating pain behind the sternum. Often it is hard to distinguish aortalgia from angina pectoris. The former lacks the sense of sinking. Aortalgia can often be influenced by antineuralgic remedies, such as quinin and pyramidon, which are not effective in angina pectoris. In all stages of aortic syphilis varying stages of dyspnea may be seen even where there is no aortic valvular insufficiency. When decompensation has set in lancinating or pressure pain is felt at the cardiac apex and along the left cardiac border. This pain is due to dilatation of the left ventricle. These symptoms disappear when compensation is reestablished. According to Huber, 35 per cent, according to the author's experiences, 15 per cent of these



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In congenital syphilitic aortitis the development may be late. When acquired, it develops from 5 to 20 years after the first stage. The author mentions a case where the patient was well cured and where one and one-half years after infection aortitis developed.

Aortitis may be thoracic or abdominal, the latter being rare. The thoracic is characterized by disturbances in the sigmoid ring. This is suprasigmoid simple aortitis. It may be associated with insufficiency or aneurysm, which may extend to the valves. Pain and dyspnea are the characteristic signs. It is located retrosternally or sometimes in the epigastrium. It may be continuous or paroxysmal, especially during the night, and may resemble angina. It may amount to pseudoasthma. Auscultation shows a narrowing of the caliber of the vessels. The second cardiac sound often is simply accentuated or the diastolic sound of the second tone will be heard like parchment or metal. The accentuation without change of character of tone has only a relative value. Influenza or increased blood pressure may cause the same symptoms. Hypertension is quite constant when renal complications coexist. In some of these patients the pressure is habitually nearly normal, but attacks of hypertension supervene. The discomfort is quite marked. The aorta is enlarged and the angle extends beyond the right margin of the sternum. In the X-ray picture the aortic opacity is not uniform. It becomes denser toward the heart; because of the rigidity in the aortic walls the beat is not so visible. Arsenic and mercury may be used together, but not in too large doses. In hypertension treatment must be cautious, and bismuth is better tolerated.

**Change in the aorta in syphilis.**—Budapest correspondent. *J. Am. med. assoc.*, Chicago, 1921, LXXVII, 1269.

Feldmann, pathologist to the county hospital at Gyula, has devoted special attention to the study of the aorta in syphilitic cadavers. He corroborated the findings of S. Abramow in Germany \* \* \*. He concluded from his investigations that the difference between syphilitic and ordinary aortitis is only quantitative. The diagnosis of syphilis can be made only if distinct gummas have developed in the walls of the vessel.

**Aortitis associated with systemic infections.**—Milton H. Brown. *Ann. clin. med.*, Baltimore, 1926, V, 353.

In reviewing the literature the author states that from his own observations it is apparent that the most marked reactions were associated with the presence of rheumatic fever and were almost equal to if not quite as extensive as in the cases of acute endocarditis. The more intense inflammatory reactions of rheumatic fever bring out the similarity of the mesarteritis of acute rheumatic fever to the early



stages of syphilitic aortitis, and one might easily mistake the lesion for that of early syphilis. Syphilitic mesarteritis has other features, however, such as a greater lymphoid infiltration about the vasa vasorum and sometimes gummy necrosis. In syphilis the capillaries invade the media as far as the intima and the nodular endarteritis is more marked.

**Luetic aortitis. Case records of Massachusetts General Hospital, Boston.**—Boston med. and surg. J., 1924, CXCI, 838.

The patient was a woman of 35 years, from whom very little information could be obtained. Following a second marriage, she had had one miscarriage. Previous health had been good. For the past year she had had color visions, buzzing in the ears, occasional twitching of the eyelids and skin of the arms, and loss of weight. For three months there had been sharp pain in the epigastric region, radiating up the left breast and down the arm, at first coming on after eating, but more recently it had been continuous. Vomiting occurred several times a day, with no relation to meals. Apex impulse of heart in the fifth space, action irregular, sounds of fair quality, diastolic murmur at left border of sternum,  $A_2$  over the aortic area accentuated and musical in quality. Pulses and arteries normal, blood pressure, 100/75. Urine, 1.018–1.028, trace of albumin, sugar, leucocytes, and red blood cells. Blood, hgb. 85 per cent, leucocytes 30,000–20,000, polynuclears 80 per cent, reds normal, platelets increased. Wassermann strongly positive. Patient died three days after admission.

Post-mortem showed a syphilitic aortitis with some involvement of the aortic valve and partial occlusion of the coronary arteries, hypertrophy and dilatation of the heart, edema of the lungs, congestion of the spleen and kidneys.

**Syphilitic aortitis with involvement of the aortic valve. Case records of the Massachusetts General Hospital.**—Richard C. Cabot and Hugh Cabot. Boston med. and surg. J., 1925, CXCH, 909.

This case was seen in 1903 before Wassermann tests were made at the hospital. The clinical diagnosis had been aortic and mitral regurgitation with broken compensation. It had not been possible to determine the cause before autopsy. The patient had had gonorrhea twice and "rheumatism" in the shoulder.

**Primary acute aortitis.**—B. Z. Rappaport. Archiv. path. and lab. med., Chicago, 1926, II, 653.

A case of primary acute aortitis, due to streptococcus viridans with no aortic endocarditis, is reported, not only because of the rarity of the condition but also because of the association of an acute with a syphilitic infection of the aorta.



**Severe anemia in syphilitic aortitis.**—J. Hatzieganu. Bull. et. mém. soc. méd. d. hôp., Paris, 1924, 3d ser., XLVIII, 1605.

Patient consulting physician for severe anemia was found to have 1,500,000 red corpuscles. She had been suffering from the present disease for six months and was aged 48. At autopsy a syphilitic panaortitis was found.

After that all cases of anemia and of aortitis were examined. Seven women, aged from 40 to 58 years, who were suffering from debility and fatigue, had headaches, vertigo, dyspnea upon effort, lack of appetite, slight presternal oppression, and presented pale tissues and much cellular adipose tissue. There were bruits and accentuation of the second aortic sound. The precordial dullness was increased in all directions. The röntgenogram showed dilatation of the aorta and hypertrophy of the left side of the heart. Blood: Oligocythemia, 1,200,000 to 3,000,000; oligochromemia, anisocytosis, poikilocytosis, leucopenia, 2,000 to 5,000; thrombocytopenia, slight bilirubinemia. The Wassermann reaction was 4 plus in four instances.

Special treatment in two cases produced much improvement, the red blood corpuscles increasing from 1,500,000 to 4,000,000. Other patients refused this treatment.

Aortitis must be kept in mind in all cases of anemia between the ages of 40 and 50. The aorto-anemic syndrome is apt to supervene at menopause.

**Pathology of heart pain.**—James A. Wilkins. Virginia med. monthly, Richmond, 1926, LIII, 787.

Refers chiefly to a report of 86 cases made by Willius in Minnesota Medicine in 1924. Besides coronary sclerosis, 19 per cent of the patients had syphilitic aortitis, one had an aneurysm of the root of the aorta, and one diffuse aneurysm of the aortic arch. A brief review of the pathology of syphilitic aortitis is given.

**A case of aortic disease in which relief from the anginal complex coincided with the onset of auricular fibrillation.**—B. T. Parsons-Smith. Proc. Royal soc. med., London, 1926, XIX, Clinical sec., 1.

In this case the Wassermann was positive. F. Parkes Weber suggested that both the auricular fibrillation and aortitis might be due to syphilis. Cardiac irregularity might be of service to a patient if it led to a Wassermann being taken and so to the discovery of a latent syphilis at a stage when treatment would be beneficial.

**Heart pain.**—R. W. Baird. Texas State jour. of med., Fort Worth, 1926, XXI, 714.

*Aortic pain.*—The pain caused by aortitis or aortic aneurysm is under the upper sternum and is dull and aching in character. It is



not paroxysmal, but is markedly increased at times. The cause is usually syphilis and so requires appropriate treatment.

**Contributions to pathologic anatomy of syphilis. I. Syphilis of the aorta.**—Edward L. Miloslavich. *Arch. dermat. and syph.*, Chicago, 1925, XII, 41.

The gross appearance of fully developed syphilis of the aorta is unmistakable. There is wrinkling and scarring, alternating thinness and thickness of the aortic wall. The intima of the aorta is marked by characteristic livid depressions.

The disease destroys the elastic muscular layer of the aorta through development of a patchy infiltration which is localized along the vasa vasorum. Conditions varying from a simple perivascular small round cell infiltration to a true gummatous formation are found on microscopic examination. Proliferations of the media are responsible for the circumscribed necrotic areas of the aortic wall; these changes in the media at times cause fibrous thickening of the intimal surface.

The characteristic changes in atherosclerosis, in contrast to syphilis of the aorta, are yellowish stripes and patches with atheromalike softening which arise through fatty degeneration of the intimal structures, and a fibrous proliferation within the intima with a tendency to hyalin degeneration and calcification. Syphilis affects the ascending aorta while atherosclerosis occurs in the descending aorta, and extends into the abdominal portion and the peripheral vessels in general. Both diseases may be found occasionally at the same time in the proximal portion of the aorta.

When syphilitic lesions localize sharply above the sinus of Valsalva the most serious complication resulting is the formation of an aneurysm. The destruction of the media and its powerful elastic structures makes the bulging of the aortic wall inevitable. Extreme aneurysmal dilatation of the proximal portion of the aorta makes it impossible for the aortic valves to close the left arterial ostium resulting secondarily in an insufficiency. The rupture of the aneurysm is the direct cause of death in many cases.

When syphilis involves the sinus of Valsalva and progresses toward the heart other complications may arise. The ostia of the coronary vessels may become narrowed or obliterated with serious disturbance of the nutrition of the heart muscle resulting. The myocardium at post-mortem has been found to be dissected by abundant fibrous and cicatricial tissue. Fibrous tissue in the muscular septum of the ventricles also occurs in connection with this condition of the coronary arteries as a result of circumscribed myomalacic foci (myomalacic scar).

Syphilitic stenosis of the coronary ostium is most serious when the intima of the corresponding peripheral coronary branches pre-



sents an atheromatous condition, thereby preventing the equalizing compensation of the collateral circulation. Occasionally there may be produced a sudden occlusion of the coronary arteries, causing death.

Following the growth of the syphilitic process from the region of the sinus of Valsalva to the valvular tissue, the aortic leaflets become thickened and shrunken. This condition is often the cause of sudden death in middle-aged persons.

**Relation of morphology to the prognosis of aortic syphilis.**—W. W. G. MacLachlan. *Am. J. med. sc.*, Philadelphia, 1925, CLXX, 856.

"The important and obvious point to be decided is the problem of dealing with the spirochetes in the aortic wall. Can the organism be killed in situ? If this is possible, the granulomatous inflammatory reaction will be replaced by fibrous tissue, or, in other words, healing will occur. It may be safer to assume that all we can hope to do would be to put the spirochete into a latent state, so that the inflammatory process does not progress. Under these conditions fibrosis might also develop, which would further protect the wall of the aorta. It is, moreover, likely that the older and more widely distributed lesion would offer much less chance of a favorable response than the earlier or smaller process. Further, if the inflammatory process in the aorta is of the type which does not involve the aortic cusps, or has as yet produced no evidence of dilatation of the aortic orifice, the factor of regurgitation is not added and the possibility of a prolongation of life made much greater. The treatment employed must include the usual antisymphilitic measures and a prolonged rest. We have seen no ill effect from the careful use of arsphenamin or neoarsphenamin, but they are of much less value and may be even dangerous in those aneurysms having an aortic regurgitation."

The prognosis in aortic syphilis has some relation to the response to treatment. The earlier the lesion is treated the better the result should be. To begin treatment early it is necessary that the condition be recognized by physical examination, serology, and Röntgen ray far in advance of the onset symptoms.

Specific treatment should be given, however, even to the stage of aneurysm. Symptomatic relief nearly always follows, and in those cases in which the valves, the orifice, or the first 1½ inches of the aorta are not involved, life may be prolonged several years.

**Syphilis of the aorta.**—James B. Herrick. *Northwest med.*, Seattle, 1926, XXV, 65.

The literature is reviewed and the pathology and manifestations discussed. Four cases are described illustrating the variations in progress the disease may make. In one there was a rapidly fatal result, in another a malignant course, in a third a slowly advancing process, and in a fourth an apparently stationary condition.



The purpose of the article is to urge the more careful study of cases, so that those of syphilitic origin may be recognized in an early stage when treatment offers hope.

The author gives mercury and iodid in increasing doses before beginning treatment with arsphenamin.

**Paroxysmal dyspnea as a symptom of syphilitic aortitis.**—Chester S. Keefer and William H. Resnik. *Arch. int. med.*, Chicago, 1926, XXXVII, 264.

From the medical clinic of the Johns Hopkins Hospital and University.

It has been generally accepted that paroxysmal dyspnea in aortic insufficiency dependent on syphilitic aortitis is due directly to the syphilitic lesions of the aorta. The authors doubt the correctness of this assumption. In 82 cases of syphilitic aortitis proved by necropsy to have the characteristic anatomic lesions, paroxysmal dyspnea was present only when associated with aortic insufficiency, hypertension, or aneurysm of the root or arch of the aorta. Twenty-four of the cases were uncomplicated syphilitic aortitis. These showed neither dyspnea on exertion nor paroxysmal dyspnea. It would seem, therefore, that this symptom is not due directly to syphilitic aortitis. It is, nevertheless, an important symptom in the differentiation between aortic insufficiency of syphilitic and of rheumatic origin.

**Aortitis with dilatation and seroreaction.**—Queyrat. *Bull. soc. franç. de dermat. et syph.*, Paris, 1925, 73.

A man, aged 45, consulted the author for shortness of breath. He had an aortitis with hypertrophy of the heart, cardiac insufficiency, and aortic regurgitation. He had had syphilis at the age of 27. The chancre had lasted three weeks and was cured by simple compresses. When he later suffered from cardiac distress he went to the prophylactic institute, where the complement test was found negative. He later once more was assured that the result of the Vernes test was negative. The author, making a test, found the reaction positive, and when the material was sent to the Vernes Institute this time the report was positive.

**Incidence of aneurysm, Massachusetts General Hospital.**—Note by Richard C. Cabot. *Boston med. and surg. J.*, 1925, CXCI, 1245.

In the autopsies from 1896 to the present, aneurysms have been found as follows:

	Aneurysms
First thousand autopsies	14
Second thousand autopsies	14
Third thousand autopsies	10
Fourth thousand autopsies	15
Last 919 autopsies	8



In the last 419 autopsies there have been but 2 cases. In the entire number there were but 8 cases involving the abdominal aorta.

**Syphilis and aneurysm: Age and sex incidence and cause of death in aortic aneurysm.**—E. M. Brockbank. *Brit. med. jour.*, London, 1925, II, 606.

During the last few years 56 cases with undoubted clinical evidence of intrathoracic aneurysm and in which there were definite records of a history of syphilis or of the results of a Wassermann blood test were admitted to the wards of the Manchester Royal Infirmary. Of these 56 cases 47 were men and 9 were women. In 52 cases there was a definite history of previous syphilis, or a positive reaction to the Wassermann test.

The Wassermann blood reaction was positive in 40 out of 44 cases tested (90 per cent). Of the two men in whom the test was negative and regarding whom there was no negative syphilitic history, one, aged 51, had an aneurysm, according to Röntgen-ray findings, while the other, aged 53, had an intrathoracic tumor which "looked like an aneurysm." Of the two women without a definite Wassermann reaction the serum of one, who was 51 years of age, gave delayed lysis in 1 in 5 dilution, and the Röntgen-ray findings in the other, aged 53, were only "suggestive of aneurysm." The ages of the 52 patients with positive test or history of syphilis varied in the men from 29 to 68 and in the women from 37 to 70.

The average age at death was 43.87 years. It is important to note that in 42.5 per cent of all the cases death occurred before 40 years of age and in 75.5 per cent before 50. The average age at death in all three diseases—aneurysm, tabes dorsalis, and general paralysis—is the same within a year or two, a fact which supports the view that they have a common origin.

**A consideration of some prominent causes of sudden death.**—Max Grossman. *Med. J. and rec.*, New York, 1927, CXXV, 384.

In syphilitic conditions the aortic arch at times may show marked sclerosis. Intravenous treatment should be used with caution in these cases where there is flatness on percussion over Ludwig's angle, as there is danger of collapse and sudden death. Marked sclerosis of the aortic arch should always be watched with suspicion, since it has also been found in cases of suspected coronary thrombosis.

**Aortitis and its complications.**—George E. Knappenberger. *J. Kansas med. society*, Topeka, 1926, XXVI, 288.

When syphilis attacks the aorta the lesions are confined almost entirely to the medial elastic coat. The process consists in the formation of multiple miliary gummata in the medial coat, the spirochetes gaining entrance through the vasa vasorum in the adventitia.



A symptom of very great value in the diagnosis of aortic disease above the valves, whether it is due to syphilis or atherosclerosis, is the presence of a ringing second aortic, which has a bell-like quality.

In middle aged or elderly people it is difficult to decide whether the dilatation is due to syphilis or atherosclerosis. If the beginning portion is dilated and the remainder normal sized the evidence points to syphilis.

If an arrhythmia develops during the course of syphilitic disease of the heart or aorta an electrocardiogram is invaluable in locating the lesion in the conduction system and gives a partial idea as to its extent. It does not give a clue to the type of pathology present nor of the amount of muscular damage. An arrhythmia in a syphilitic patient can only be proven as due to syphilis by the test of therapy.

The site of the lesion will determine the prognosis. If it is in the valvular area, the prognosis is bad. Syphilitic aortic regurgitation is a very serious disease and likely to cause death of the patient at any time. Also, if it is in the neighborhood of the coronary arteries, the prognosis is bad. The most favorable type is that in the arch or descending portion of the aorta.

There is frequent association of vascular syphilis with neurosyphilis. Probably 50 per cent of tabetics suffer from mesaortitis.

The diagnosis of mesaortitis or aneurysm is a definite indication for active antisiphilitic treatment. The iodids and mercury are the drugs of choice, although the arsenicals are not necessarily contraindicated.

**Relation of syphilis to aneurysms. Observations on 45 aneurysms in 1,595 autopsies.**—Stuart Graves. *Southern med. J.*, Birmingham, 1927, XX, 92.

The author states that in this study the admissions show about 45 per cent colored and 55 per cent white people. In 1,595 autopsies there were found 45 aneurysms (2.8 per cent); 95.5 per cent were in negroes and 4.5 per cent in whites; the Wassermann reaction was 3 or 4 plus in 75.5 per cent of the cases. The negative Wassermann reactions were usually found in cases of aneurysm which gave historical or anatomic evidence of syphilis.

This study included not only the relation of syphilis to aneurysms but also the incidence, character, and distribution of the aneurysms because of their clinical interests.

In connection with the distribution of aneurysms between male and female, it is of interest to note that this series shows that they were found in the male more than twice as often as in the female.

The eventual termination of aneurysms is interesting. In this series 46.6 per cent ruptured, most commonly into the pericardial cavity, almost as many times into the retroperitoneal structures, next



most commonly into a pleural cavity, etc., as shown in the table given. Several cases are described in detail.

The tables accompanying this study show the autopsy numbers by years, sex, color, type of aneurysm, whether single or multiple, where located, whether ruptured or not, and the Wassermann reaction in all except three cases; also percentage distribution, as to race, sex, type, location, ruptured or not, and Wassermann reaction.

**Aneurysm an anomaly of the circle of Willis.**—Lawrence Jacques.

Arch. pathol. and lab. med., Chicago, 1926, I, 213.

The patient was a woman, 73 years of age. Neither clinical nor anatomic evidence of syphilis was present. According to Kaufmann, syphilis is a less frequent cause of these lesions than atherosclerosis and is held responsible for a relatively small proportion of the cases in literature.

**Unusual case of aortic aneurysm.**—W. A. Young. Trans. roy. soc. trop. med. and hygiene, London, 1927, XX, 478.

The case reported is one of a male aged 30, who suddenly collapsed and died on the way to the hospital. On opening the aorta a hole seven-eighths inch long by one-half inch wide was seen, allowing communication between the aorta and the sac. Round the opening in the aorta the endothelium was puckered but intact as regards surface continuity, suggesting a condition of long standing.

The puckered portion of the aortic wall was white in color and dull and stood out definitely against the normal aorta. A piece of the puckered part was examined histologically with the following findings: A section showed the condition to be a typical syphilitic aortitis. The intima was thickened and fibrotic with fibrin deposit on the surface. The elastic layer was visible only here and there. Round celled infiltration was large in quantity, with an occasional hemorrhage and giant cell to be seen. The adventitia was markedly increased and the general appearance was gummatous.

It is interesting to note that the deceased had never complained at any time of shortness of breath, although his duties as a messenger entailed his cycling at least 15 miles a day and part of the road was not level.

This is a case where the vascular system has borne the full brunt of the infection, and it is not an uncommon feature in Accra. Hard chancres are rarely seen, treatment for them being seldom sought, and secondaries are often skipped, the first definite sign of infection being tertiary lesions of the heart and vessels. Many pathologic signs may not really be syphilitic, but may be due to yaws, for possibly 70 per cent of the population has yaws at one time or another, and its tertiary manifestations are not definitely known, and will



not be until some serologic or other test can differentiate between yaws and syphilis.

**Aortic dilatation and aneurysm.**—Wallace Wilson. Canadian med. assoc. jour., Toronto, 1922, XII, 283.

Wilson states that the greatest single factor in producing an infective aortitis is syphilis. Quotes Hubert: "Aortitis comprises 70 per cent of all visceral lues"; and Trumbull: "Specific aortitis was by far the most constant lesion found in syphilitics at autopsy."

**Syphilitic aortic aneurysm.**—E. J. Stolkind. Med. press, London, 1922, CXIII, 466.

Stolkind quotes various authors on the etiology and pathogenesis of this condition. He has been unable to find in the literature a single case of proved congenital syphilitic aortic aneurysm in older children and especially in adolescents and adults. As regards sex, aortic aneurysms were found in 11 out of 36 female patients with syphilitic aortitis, or nearly 30 per cent; out of 96 male patients, in 47, or nearly 49 per cent. In England and Wales deaths from aneurysm reported in 1919 were 711 males and 180 females. Of the 891 deaths 1 occurred in a child under 1 year; 2 between 10–15; 35 between 20–35; 120 between 65–75; 58 at 75 years and upward. In the majority of cases the patients were infected with syphilis at the age of 19–25 years. The interval between syphilitic infection and death in the majority of cases of syphilitic aortic aneurysm ranged between 15–30 years. Tiselius reported that out of 850 insured persons with syphilitic infection 3.4 per cent died of aortic aneurysm. Out of 150 cases reported by Blaschko 2.6 per cent died. Symptomatology, diagnosis, and complications of aortic aneurysm are discussed. Treatment which Stolkind recommends is given. A unique case of miliary gummata mesaortitis (aortitis gummosa) and aneurysm of the descending aorta is recorded.

Six cases of syphilitic aortic aneurysm with a post-mortem examination made by Prof. E. Frankel are recorded.

**Concerning aneurysms.**—Oskar Klotz. University of Toronto Studies, Pathological Series, No. 7, University Library, 1926.

There is a great divergence in the frequency of syphilis in different countries, and though syphilis is important as a factor of aneurysm in the aorta one can not conclude from the high proportion of syphilis as to distribution of aneurysms in different races. Aneurysm is not only dependent upon the incidence of syphilis but also upon want of care given to the treatment of the infection or the disease when it is recognized.

The average interval between infection and the appearance of symptoms and aneurysm was found to be 17.2 years by Cummer



and Dexter. Longcope found 16.4 and Denke 20 years' intervals. The aorta is one of the common points of localization of the infection. Symmers found that of 314 cases, with a positive Wassermann reaction, 55.7 per cent had syphilitic aortitis and 45 had aneurysm. Larkin and Levy found that Wassermann positive cases may die of pathological lesions of the aorta in 90 per cent. From a historical point of view, old syphilitics dying with a positive Wassermann reaction in 60 per cent die from their aortitis and that 94 per cent of patients suffering with aortitis give a positive Wassermann reaction. Further statistics are given. Schroetter found aneurysm in only 230 of 19,300 autopsies at Vienna in 10 years. Eppinger reported 22 aneurysms in 3,149 autopsies, and Guy's hospital 325 of 18,678 autopsies. These reports were made prior to the Wassermann era.

*Treponema pallidum* has been repeatedly demonstrated in aortic lesions and in the walls of aneurysms; it is not readily discovered. It does not permeate the injured areas in the aorta and does not persist in scars. It is generally found in clusters about inflammatory portions near the vasa vasorum.

Before the age of 20 aneurysm is relatively rare, and if occurring early is usually not syphilitic. In the fourth and fifth decades the numbers are uniform. Syphilitic aortitis in its severe form is generally seen five or more years after the initial infection, and aneurysm occurs later. These early lesions can be shown up only by the microscope. Later the intima shows nodular proliferation. Syphilitic aortitis should be looked for first in the ascending aorta, next in the arch, and in fewer instances it lies within the thoracic aorta. The lesion rarely goes beyond the diaphragm. If the abdominal aorta is involved it is generally near the coeliac axis.

Often syphilitic individuals suffer from aortitis for many months before they suddenly become aware of vascular weakness when they exert themselves. Strenuous treatment may fail to eradicate the infection from the aortic wall. It is uncommon to see spirochetes in the tissues of the intima, except in cases where the small branches of the vasa vasorum have penetrated through the inner two-thirds of the media.

Aneurysms may be found elsewhere than in the aorta. The syphilitic lesion may not remain restricted to the aortic structures, but advance along the vessels of the neck, producing destruction of the carotid and innominate arteries.

Syphilitic lesions of the cerebral vessels are not as frequently reported as some years ago. Of 1,000 cases 695 occurred in the aorta and 133 in the brain. Rupture of aneurysm is the most common cause of death in those suffering from this lesion. It may press



on the bronchus. True aortic valvular disease resulting from syphilis of the aorta the author has found rare.

**A case of aneurysm of a sinus of Valsalva bursting externally.—**

J. H. Sheldon. *Lancet*, London, 1926, I, 178.

Case is reported of a syphilitic patient suffering from an aneurysm. In July of 1924 a swelling appeared in the region of the right nipple and below. In December a soft pulsating swelling appeared in the midline of the sternum at the level of the sixth costal cartilage. This was diagnosed as a gumma. After treatment with iodids andluetol the swelling disappeared, though pulsation could still be seen and felt. Three months later the swelling reappeared and the skin broke, showing a mass of pulsating blood clot from which there was a slight oozing of blood. A sudden severe hemorrhage occurred about three weeks after admission to hospital. The next day the aneurysm burst through the hole; death occurred in two minutes.

**Aneurysms of Scarpa's triangle.—R. W. McNealy and J. L. Spivack. Surg. gynec. and obst., Chicago, 1925, XLI, 817.**

Approximately 8 per cent of all aneurysms are those of the femoral artery. To bullet and stab wounds and surgical accidents can be attributed more than 90 per cent of all aneurysms.

In addition to operative treatment, cases with a positive Wassermann or clinical lues should receive treatment for syphilis.

The technic of the operation is given. There are a number of case reports and bibliography.

**Pulmonary syphilis and aneurysm of the aorta.—G. E. Mignault.**

*L'Union méd. du Canada*, Montreal, 1926, LV, 363.

The author presents a case of specific mediastinitis which slowly moved toward the lungs and caused an aneurysm of the aorta. Inflammation of the mediastinum endangers the heart, the pericardium, the pleura, the sympathetic pneumogastric recurrent laryngeal nerve, the esophagus, trachea, bronchi, superior vena cava, and the thoracic duct. Syphilis and tuberculosis may cause inflammation. In syphilitic mediastinitis there may be tertiary involvement of the glands of the mediastinum, the lungs, and pleura. Brissaud states that it may be accompanied by aneurysm of the aorta. Such a case is reported by the author.

The patient complained of the sensation of a mass in the chest, which was lifted upon coughing. The cough was almost like whooping cough, with mucous expectoration, with hemoptysis, but with intense dyspnea and bitonal voice. The patient had lost weight, but had no fever. Pain was most intense in the left lung.

The whooping cough was due to compression and irritation of the pneumogastric, the bitonal voice to compression of the recurrent



laryngeal nerve, and dyspnea to insufficient supply of the lungs with air. The pulmonary surface was considerably reduced from the functional point of view. There was marked development of collateral circulation about the left thorax, the breast, clavicle, and their surroundings, which pointed to compression of the superior vena cava. A systolic wheezing was found in the second left intercostal space. Vocal vibrations were abolished in the anterior portion of the upper part of the left hemithorax. An opaque, round mass extending from the hilus to the center of the lung was immobile and merged into the cardiac shadow.

For differential diagnosis, hydatid cyst of the lung was considered.

After much questioning, the patient admitted that she had been treated for two years at a hospital many years ago and that her husband had been infected. She had lost the vision of the left eye; on the scalp a scar of a gumma was found. The Babinski and the Wassermann tests were positive.

Antisiphilic treatment caused the eye to improve considerably, weight increased, the patient was much more calm. In the radiogram the movement of the heart was discernible. The mediastinum on the level of the sternum and about the aneurysm had cleared up.

**Aneurysm of the ascending aorta communicating with the pulmonary artery. Report of a case.**—Francis D. Gunn. *Arch. pathol. and lab. med.*, Chicago, 1926, I, 562.

Not more than 40 or 50 cases of aortic aneurysm perforating into the pulmonary artery have been reported. The reported cases differed little in their clinical features. The peculiar harsh systolic murmur accompanied by a thrill which was found in this case was a common finding. There were variations in the size and shape of the aneurysm, the location of the perforation, its age and size.

In most cases there was a sacculated aneurysm at the root of the aorta involving the sinuses of Valsalva or located immediately above them.

The unusual feature of the author's case was the long survival of the patient after the perforation occurred, about one year.

**A study of 4,000 reported cases of aneurysm of the thoracic aorta.**—Linn J. Boyd. *Am. J. med. sc.*, Philadelphia, 1924, CLXVIII, 654.

More than 5,000 cases of thoracic aneurysm have been reported in the literature. Many comment on some unexpected feature and often the diagnosis was made post-mortem. This review was made to ascertain, if possible, the reasons for the mistakes and to suggest remedies. Only original reports were considered.



Aneurysm of the thoracic aorta is five and six-tenths times as common in males as in females. It may occur in infancy or old age, the maximum curve being from 36 to 40 years in males and from 46 to 50 years in females, corresponding to the period for syphilitic vascular disease. It is very common among negroes, probably due to the prevalence of syphilis.

Infection is the chief cause, syphilis coming first, the estimates varying from 25 per cent to 92 per cent. No attempt was made in this review to prove the incidence from the pathologic findings reported, but the interval between the primary infection and the first symptoms of aneurysm was noted. It was found that in 200 cases the average time was 20 years, which corresponds to the maximum interval for syphilitic aortitis. The most common site is the ascending aorta, then the arch, the descending, and the thoracic, in the ratio of 10-7-3-1.

The symptoms are pain, cough, dysphonia, dysphagia, loss of weight and appetite, palpitation, pulsation, cyanosis, ocular phenomena, involvement of the recurrent laryngeal nerve, and tumor. Pain may be of three types—anginoid, pressure, or a terrific radiating pain in the chest usually followed by collapse. Pressure pain occurs late and is often considered "rheumatism" or neuralgia. Ocular signs may include dilated pupils, widened slit, protrusion of the bulb, and in the stage of paralysis, miosis, exophthalmos, and sympathetic ptosis. Inequality of the radial pulse and substernal or parasternal dullness are common. Auscultation shows aortic regurgitation and in the aneurysm itself a full first sound followed by a ringing accentuated second sound. Occasionally there is a systolic humming-top murmur.

Duration of symptoms was studied in 830 cases. In 312 cases the period was under three months and 674 died within a two-year period. The longest period reported was 30 years. About 52 per cent of the cases died from rupture.

**Saccular aneurysm of the descending thoracic aorta, with direct rupture into the lower lobe of the left lung and the left plural cavity. The report of a case and remarks on rupture and hemoptysis in aortic aneurysm.**—Ernest S. du Bray. *Am. J. med. sc.*, Philadelphia, 1921, CLXI, 407.

Author gives history of case and post-mortem findings. Clinical impression as to the cause of death: Massive pulmonary hemorrhage into bronchus in a case of ulcerative pulmonary tuberculosis. Anatomic diagnosis: Aneurysm of the aorta, with rupture into the left lower lobe and into the left chest cavity; syphilitic aortitis; dislocation of the heart, chronic local pleurisy about the aneurysm; pulmonary syphilis. \* \* \* Hemoptysis must be regarded as a symp-



tom of thoracic aneurysm as well as a symptom of other thoracic disease.

Full bibliography.

**Spontaneous arterio-venous aneurysm in thorax.**—T. Shennan.

Edinburgh med. jour., 1925, XXXII, 325.

A case of perforation of extension of aneurysm of aorta into upper part of right auricle—syphilitic aortitis—is reported in detail. Autopsy disclosed an aneurysm of the ascending aorta partly obliterating the lower part of the superior vena cava, leaving two narrow channels anterior and posterior, the rupture occurring into the right auricle just below the canal opening; the case clinically resembling those in which the perforation was higher.

Of 64 cases from the literature of perforation into innominate vein, superior vena cava, or right auricle, in 29 cases syphilis was either positively diagnosed, or its presence may be assumed from the predominance of syphilis in the etiology of aneurysm of the aorta, so that the percentage in which syphilis was the cause was probably higher than is indicated by the reports of the cases.

**Multiple aneurysms of large vessels. Report of a case.**—Anatole

Kolodny. J. Am. med. assoc., Chicago, 1926, LXXXVI, 397.

In this case aneurysms of the right axillary artery, of the left carotid artery, of the right external iliac artery, of the thoracic descending aorta, and of the right popliteal artery were found.

Thrombosis of the aneurysm of the popliteal artery caused complete occlusion of the lumen of the vessel, followed by gangrene of the extremity. The author comments: "The multiplicity of the aneurysms indicates that this is a case in which the resistance and elasticity of the vessel walls were lessened previous to the appearance of the aneurysms. Arteriosclerosis is the most frequent pathologic condition in which the elasticity of the vessels is lowered. The next in frequency is syphilitic arteritis, a condition which is very common in tertiary syphilis, and which only recently has been recognized as entirely separate from the true arteriosclerotic entity. There is sufficient evidence on hand that syphilitic arteritis and not the true arteriosclerosis is most responsible for aneurysmatic dilations of vessels.

"The presence of calcareous deposits and cholesterin crystals in the thickened intima and the fraying of the internal elastic membrane into separate accessory lamellae which unite on the farther edge of the plaques in the present case definitely speak for arteriosclerosis. On the other hand, the thickened media of the larger vessels and the lymphocytic infiltration about the vasa vasorum are distinct signs of syphilitic arteritis. In addition to this, the strongly



positive Wassermann reaction and the multiplicity of the aneurysms also support the diagnosis of vascular syphilis in the present case. Here is, therefore, a case in which true arteriosclerosis is superimposed on tertiary vascular syphilis."

**Syphilitic aortitis with decompensation supervening in the course of antisyphilitic treatment.**—Ch. Laurent. Loire méd., Saint-Etienne, 1925, XXXIX, 490.

A man, aged 49, had had syphilis since 1897. He had been given prolonged treatment with mercury. In 1908 he had motor-ocular paralysis, and symptoms of tabes and was given injections of calomel and 914 in 1920. Large doses were continued until 1921, and improvement was seen. In 1923, 12 injections of hydroxid of bismuth were made. Upon the appearance of testicular complications mercury pills and later intravenous 914 and potassium iodid were given.

Even while this treatment was going on a pathologic sound developed at the aortic valve and the pulse became dicrotic.

**Aortic aneurysm.**—G. Treupel and E. Schwab. Ztschr. f. ärztl. Fortbldg., Berlin, 1925, XXII, 97.

Sac and spindle-shaped diffuse aneurysms of the aorta arise on the base of syphilitic mesaortitis. It is a late symptom of syphilis. Under the influence of the blood pressure damage is wrought to the media, and scar dents form the starting point for the dilation at certain points.

Aortic aneurysm is more frequent in men than in women. Discomfort arises on an average after from 15 to 20 years. The röntgenogram is of great importance for the diagnosis in the earlier stages. In a large percentage compression or perforation of the neighboring organs occurs. The condition at best may be arrested by modern antisyphilitic treatment. The scars can not be reduced.

**Aneurysm near the heart in a syphilitic.**—Bonnet and Beaupère. Presse méd., Paris, 1925, XXXIII, 290.

A woman, aged 42, who had contracted syphilis when 18, developed asystolic condition. At autopsy a large mass was found at the level of the left ventricle, evidently an aneurysm. No aortic or coronary lesions were found. Clinically there had been edema of the legs, albuminuria, a galloping heartbeat which might have been due to cardiac gumma. The patient had had several other gummata within the last 20 years.

**Coronary thrombosis with congenital absence of the left coronary artery.**—Fred M. Smith and V. C. Graber. Arch. int. med., Chicago, 1926, XXXVIII, 222.

The clinical features of coronary obstruction are fairly generally known. The case cited is of particular interest because of the con-



genital absence of the left coronary artery. Patient is a male, 46, admitted to hospital May 26, 1925, complaining of severe pain over the lower sternal region and shortness of breath.

The past history was negative except for gonorrhea in 1910 and a nocturia for the last five or six years. Patient stated he had not had syphilis. It was later discovered that he had been treated for a syphilitic infection. Temperature on admission was 101° F. The hemoglobin blood count was 85 per cent; red blood cells totaled 4,320,000 and white blood cells 9,000. The urine was negative. During first four days in hospital pain was continuous except when relieved by morphin. Temperature ranged from 99.2 to 101 for two weeks. At the end of the second week shortness of breath and signs of passive congestion disappeared. At the end of two months patient sat up in chair and was gradually permitted to walk. August 2 the patient was discharged from the hospital, condition not satisfactory. He returned to the hospital the following morning critically ill, with findings of cardiac failure. He improved for a while, but later took a downward course and died November 22 of cardiac failure. The clinical diagnosis was coronary obstruction and cardiac failure.

This case gave no clinical manifestations of myocardial weakness prior to the cardiac accident. The symptoms typical of coronary thrombosis were the sudden onset of severe substernal pain, lasting for days and only relieved by repeated doses of morphin, associated with the symptoms of cardiac failure, such as marked dyspnea, cyanosis, edema of the lungs, and engorgement of the liver; changes in the cardiac findings, such as increase in size, muffled tones, gallop rhythm, and later the discovery of a pericardial rub, together with temperature and leukocytosis.

The coronary circulation was very unusual in that the blood supply to the entire heart was furnished by one large artery, which, during its early course, corresponded in location with that of the right coronary artery.

The sclerosis of the coronary artery was advanced, whereas the aorta was regarded as normal. Even though the patient gave a strongly positive Wassermann reaction, the sclerosis corresponded to the senile type.

**Aneurysm at the base of the descending aorta with recurrent paralysis.**—Rouslacroix, and Benet. *Jour. des praticiens*, Paris, 1925, XXXIX, 216.

A specimen of a patient was presented. The early symptoms had been cough, dyspnea, metallic sound on the right side, and a voice with two pitches. The Wassermann was positive, and by its aid, combined with the radiogram, aneurysm of the descending aorta was diagnosed. Death from rupture into the left pleura had occurred.



**Rupture of an aortic aneurysm into the superior vena cava.**—William N. Anderson. *J. Am. med. assoc.*, Chicago, 1923, LXXXI, 1877.

Case described because it presents a unique group of physical signs.

**A case of abdominal aneurysm with litigation of the aorta.**—George S. Johnson. *Proceedings of the Washington University medical society*, meeting February, 1925. *J. Missouri state med. assoc.*, St. Louis, 1925, XXII, 191.

The patient had had gonorrhea 39 years before. He denied having had syphilis. At the time of admission to the hospital the blood Wassermann was 4 plus.

The aorta was ligated, but the operation is not to be considered entirely successful as yet.

**Syphilitic aneurysm of abdominal aorta.**—Y. Manouélian. *Bull. et mém. soc. méd. d. hôp.*, Paris, 1921, XLV, 192; *J. Am. med. assoc.*, Chicago, April 16, 1921.

Manouélian reports a fifth case of aneurysm of the aorta in which the spirochete was found in the tumor. The aneurysm was in the abdominal aorta in two of these cases. The nerves in the region showed signs of neuritis, and this syphilitic neuritis is the anatomic basis for pain in such cases. He emphasizes the connection between the degenerative lesions in the solar plexus and the atheromatous lesions in the aorta.

**Syphilis and high blood pressure.**—Burton P. Thom. *Med. record*, New York, 1922, CI, 89.

Thom gives blood-pressure measurements of 50 syphilitics picked at random from his cases in the municipal prisons of New York.

Author concludes that approximately one-half or more of all syphilitics, irrespective of sex or lack of objective symptoms, show an increased blood pressure. This pressure may not necessarily give rise to subjective symptoms, but they are more vulnerable to attack from other life-destroying diseases. Syphilis is, in the author's opinion, the most frequent cause of the syndrome of high blood pressure and all that this condition ultimately connotes.

**Incidence of infections in hypertension.**—William G. Walker and James P. O'Hare. *Boston med. and surg. J.*, 1924, CXC, 968.

A study was made of the comparative incidence of past infections in 400 unselected hospital patients with normal blood pressure and 400 with hypertension. Results indicate that past infection is not an important cause of high blood pressure. Syphilis was almost three times as prevalent in the control cases as in those with hypertension. Other writers are quoted who found a much higher inci-



dence of syphilis, 90 per cent being reported by some. The author points out that this study does not take into account the severity of given infections.

**Infantile arterial hypertension, a congenital syphilitic stigma.**—J. G  n  vri  r. Bull. m  d., Paris, 1925, XXXIX, 169.

The author found hypertension in a number of congenitally syphilitic children who were presented to him for tracheobronchial glandular involvement, anemia, retarded growth, and ready fatigableness. Often this was the only symptom. Adenopathy is often erroneously diagnosed. In this class of children no renal disturbances are associated with the hypertension. If shortness of breath occurs upon slight exertion body exercise must be diminished. If it is not so intense the child must be watched to stop it moving violently when out of breath. Animal albumin should be restricted to 500 gm. milk per day. Eggs, meat, and fish should be given in 10 gm. doses only for every 10 years with a maximum of 90 to 100 gm. Green and starchy vegetables and fruit boiled in water, fresh butter or a little cheese, toast, and water should constitute the main diet.

Remedies to reduce the tension are not indicated in absence of functional disturbances and decompensation. Valerian may be used in erethism. According to tolerance, the iodids may be administered. For instance, sirup of iodotannin, 1 teaspoonful with the 4 meals or arsenic iodid 5 cg., biniodid of mercury 15 cg., potassium iodid 3 cg., water 50 c. c., 10 to 40 drops a day according to age.

**Analysis of 100 cases of hypertension.**—J. Heyward Gibbes. Southern med. J., Birmingham, 1926, XIX, 413.

Only 2 per cent of the cases had syphilis.

**Hypertension: Clinical aspects of the etiology and therapy.**—Wilber E. Post and Edward J. Steiglitz, Am. J. med. sc., Philadelphia, 1926, CLXXI, 648.

In order to study the relative importance of the various etiologic factors an analysis of 110 consecutive cases (55 males and 55 females) was undertaken. The incidence for syphilis was 12.6 per cent. The average age of these patients was 52.1 years. In those under 45 years of age syphilis had a percentage of 15.1. By far the most frequent and important factors found are foci of infection somewhere about the head.

**Analysis of a series of cases manifesting arterial hypertension, with special reference to prognosis.**—Thomas P. Sprunt. Southern med. J., Birmingham, 1926, XIX, 416.

Of the 104 cases, 8 had had syphilis.



**Secondary syphilitic hypertension.**—G. Brouardel, L. Giroux, and M. Bonnot. *Paris méd.*, 1923, XIII, 141.

Syphilis at the present time is considered a cause of arterial hypertension. It has an important place in the hypertension of chronic nephritis during the course of syphilitic aortitis. There is a general tendency to incriminate syphilis in chronic uremic nephritis. Hypertension is generally a late syphilitic manifestation which arises about 20 years or more after the infection. Probably, however, it starts much sooner.

A case is reported of a woman, 25, suffering from motor and sensory disturbances on the right side, mainly the upper extremity. Heaviness developed in the arm and syphilis was suspected because of many minute scars all over the body, some round, others smooth and white or with peripheral pigmentation. She had also suffered from angina for five months, which was accompanied by bilateral submaxillary adenitis. For one year she had had furuncles. Upon cyanid of mercury and quinobismuth administration the lesions disappeared rapidly and the patient picked up generally. The motor-sensory disturbances diminished and the arterial tension dropped from 17 to 10.

It is remarkable that, though she underwent various treatments, syphilis was not discovered.

**Solitary syphilitic hypertension.**—A. Dumas. *Paris méd.*, 1924, XIV, 26.

Where syphilis can be demonstrated in a person afflicted with hypertension the treatment ceases to be entirely symptomatic and must become specific. The arterial lesions which are responsible for the condition must be treated. One no longer waits for renal aortic lesions to show up the infection. If nothing but hypertension can be found a cautious mercury treatment with or without iodids or arsenic therapy must be started. One will have the satisfaction of seeing the hypertension diminish and will spare the patient cerebral hemorrhage and often paresis.

**Permanent arterial hypertension in connection with syphilis and changes produced by treatment.**—R. Klein. *Zentralbl. f. Herz- und Gefässkr.*, Dresden and Leipzig, 1926, XVIII, 7.

The author discusses hypertension of over 180 mm. Riva Rocci. Some of these cases are directly due to syphilis. They may or may not be associated with positive seroreactions. Others are due to other causes, but syphilis may exist simultaneously, for instance, in climatic hypertension with syphilitic arthritis, etc.

In patients with arterial hypertension there is a constitutional predisposition of the vegetative and endocrin system. The author's



patient did not tolerate salvarsan well, had dyspnea, nausea, general discomfort, tachycardia, and increase of arterial tension upon administration of the drug.

**Arsenic and bismuth combined (salluen) are recommended.**

**A case of venous syphilis from the onset.**—L. Spillmann and Morel. *Bull. soc. franç. de dermat. et syph.*, Paris, 1926, 452.

At the present time venous infection of syphilis is not acknowledged by most syphilographers. Few cases of this type are reported and are not convincing.

The reported case was that of a physician who one morning found a characteristic erythematous eruption on his chest and abdomen and had headache and asthenia. He consulted a colleague, who made the diagnosis of secondary syphilis.

About a month before that a patient had been suffering from severe hemorrhage after artificial delivery. Blood transfusion was necessary, and as the husband seemed little inclined to be the donor the physician volunteered. As danger was imminent a hasty procedure was necessary, and when needles had to be removed they were confused, and the one that was used for the patient first was used on the physician. In this manner he contracted syphilis from the veins and had shown no chancre.

**Intermittent claudication in a syphilitic with lesions of the aorta, the iliac vessels, and the arteries of the lower extremities.**—

Letulle, J. Heitz, and Magniel. *Arch. mal. du cœur*, Paris, 1925, XVIII, 497.

Obliterating arteritis of diabetics and syphilitics is compared. In the latter case infection had occurred 50 years before. At autopsy the diabetic inflammatory changes seemed to have remained more localized in the endarteritic portions. The middle and outer layers had retained almost complete integrity. They at least presented the common aspect. The syphilitic patient had sustained deeper damage in the media from repeated specific inflammation exacerbations. The internal elastic layer was loosened and folded in consequence of vegetations in the middle layer. It presented a characteristic renal aspect. The elastic fibers were badly mutilated at certain points. The adventitia was hypertrophied in the syphilitic, the vessels were heavier, the veins smaller, and the trunks of the vessels were frequently involved. The external wall and even the surface of the vessels were much more affected in the syphilitic than in the diabetic case.

Cholesterin infiltration of the walls of the arteries was not so marked in the syphilitic, but there was quite a little infiltration in the thoracic and abdominal aortae.



The patient had complete claudication of the lower extremities. He could take small steps only, which reminded one of those seen in pseudobulbar paralysis. He had been suffering from pain in the calves of his legs for two years. It made him stop in the street. The left large toe was painful when he was lying down. He had asthmatic oppression at night, with the pain in the precordial region.

At the age of 20 he had sustained the infection and at the age of 25 had had malaria. The left ventricle was much enlarged and the descending aorta measured 3 cm. The Wassermann reaction was negative; there were hemiparesis and pronounced hypertension. The trouble experienced upon walking could be explained by the condition found in the abdominal aorta, a beginning aneurysm, and partial obliteration by a thrombus. The tibial arteries were badly obliterated.

The case is diagnosed as a panarteritis.

**Etiology and pathology of periarteritis nodosa.**—William H. Harris. Southern med. J., Birmingham, 1926, XIX, 426.

The failure to demonstrate the presence of *Spiriochaeta pallida* in the lesions, the negative Wassermann reaction which is so often positive in other forms of vascular syphilis, and the difference in the histopathology of the lesions are sufficient evidences to eliminate syphilis as a causative factor.

**Two cases of cerebral aneurysm causing ocular symptoms, with notes of other cases.**—J. A. Conway. Brit. jour. ophthal., London, 1926, X, 78.

Fearnside thought that syphilis is not as common a cause of cerebral aneurysm as was formerly suspected. The author's experience leads him to agree with this view. In most post-mortem reports the vessels are usually reported as being healthy. Syphilis is seldom mentioned.

**Rupture of aneurysm of branch of left renal artery, complicating pregnancy.**—A. E. Chisholm. Brit. med. jour., London, 1926, I, 419.

In this case the patient died before a Wassermann test could be made. A microscopic examination of the aorta revealed no evidences of syphilitic endocarditis. The baby, however, showed evidences of syphilis, though no spirochetes were found. There were autolysis of the viscera, adhesive peritonitis, periportal fibrosis in the liver, but no definite monocellular cirrhosis, splenic enlargement with very slight fibrosis, and chondroepiphysitis of the femur. The placenta was suggestive of syphilis. The findings are not regarded as conclusive.



**Syphilitic arteritis.**—C. Achard and J. Thiers. Soc. méd. des hôp., April 11, 1924. Bull. méd., Paris, 1924, XXXVIII, 444.

A patient, aged 65, is presented with syphilitic arteritis, followed by limited gangrene on the left side of the fourth toe and a popliteal aneurysm on the right. Röntgenologic examination showed calcification on the femoral and tibial nerves of the left leg, which was the site of rapid amyotrophic degeneration. This was a consequence of a degenerative process in the nerves and a change in their vascular nutrition.

**Syphilis of the medium and smaller arteries.**—Aldred Scott Warthin. New York med. J., 1922, CXV, 69.

Warthin makes preliminary report of study of autopsy material of 1,250 cases of syphilis, including 400 cases showing lesions of syphilis and an additional 50 autopsy cases of tabes and paresis. Author concludes:

"Simple arteriosclerosis of medium and smaller arteries is more common in syphilitics than in nonsyphilitics. It is probably not due to localization of spirochetes in the intima but is of secondary origin. Syphilitic periarteritis, panarteritis, and arteritis obliterans of smaller arteries occur in all cases of chronic and latent syphilis. Syphilitic lesions of smaller arteries are rarely gummatous in character. Syphilitic mesarteritis occurs in the carotids, iliacs, femorals, tibial, and pulmonary arteries. It is usually of slight degree, found only in microscopical examination. Syphilitic obliteration of the pulmonary arteries may lead to the production of Ayerza's disease (chronic cyanosis, polycythemia, and splenomegaly). Clinical syphilis of peripheral arteries of the extremities is more common in the legs and feet, manifesting itself in gangrene, perforating ulcer, sclerosing atrophy, or symmetrical gangrene simulating Raynaud's disease.

"Syphilitic arteritis may be a cause of peptic ulcer, localized ulcers, atrophy and various forms of dystrophy, due to disturbed circulation, as the result of partial or complete obstruction of the lumen of the affected artery. Syphilis of smaller arteries and arterioles plays a very important part in paresis, tabes, and cerebrospinal syphilis, and in the production of localized degenerations of brain and cord. Syphilis of the coronary arteries is also of clinical importance. In general it may be stated that localized syphilis of the smallest arterioles is an essential part of the general pathology of chronic or latent syphilis."

**Emergency treatment of syphilitic cerebral arteritis.**—V. Fossati and R. Maglione. Rev. sud-americana, Buenos Aires, 1925, XIII, 353.

Sézary believes that obliterating syphilitic arteritis may give rise to hemiplegia and hemiparesis, which can be cured with prompt



intensive antisyphilitic treatment. Foix and Hillemand believe that it is only an arterial spasm which diminishes the lumen of the vessel, causing defective nutrition. This congestion is not hard to diagnose, and the hemiplegia is generally preceded by passing paresis and debility. Success of antisyphilitic remedies depends on the condition of the tissues of the nervous system. A young patient without albumin in the urine and suffering from hemiplegia without ictus is probably a syphilitic.

Treatment with neosalvarsan was made in a case of a man 28 years old who had been ill for three days with hemiplegia, which was overcome by the remedy. Another case had existed for three days. The man was 25 years old, and the results were the same as in the first case. Another patient, aged 31, with right facial paresis and general hemiparesis, was also cured.

**On telangiectatic and livedo late syphilids (Brocq's essential telangiectasis and Ehrmann's livedo racemosa).—E. Hoffmann.** Deutsche med. Wchnschr., Leipzig, 1924, L, 1294.

A large number of cases of telangiectasis and livedo racemosa can be traced to syphilis. Ehrmann found an obliterating endarteritis of the subcutaneous vessels and in essential telangiectasis hyperplasia of the media and adventitia of the subcutaneous arteries in similar cases.

These conditions constitute signs of old syphilis.

**Telangiectasis associated with syphilis.**—Chargin. Arch. dermat. and syph., Chicago, 1923, VIII, 94.

**Acute gangrene of the forearm in syphilitic arteritis.**—V. Ariola. Gazz. d. osp., Milan, 1924, XLV, 378.

Acute gangrene of the extremities has been seen to follow typhoid, grippe, pneumonia, but it is more apt to follow chronic infection, such as syphilis, tuberculosis, and atheroma, arteriosclerosis, and endarteritis obliterans, etc.

The author's patient, aged 34, had had a soft chancre when 19, with radiating glandular swelling, which caused spontaneous suppuration. Since then no complications had occurred. Suddenly one morning when arising the patient found the left hand very pale and heat flashes in the left side of the face. The radial pulse was absent and pronation and supination of the forearm were lost. There was loss of voice, and toward evening aortic pulsation diminished. Hand and forearm became discolored and turned black and lost sensibility for temperatures. There was paresthesia of the face and paralysis of the vocal cord of the same side. The pharyngeal reflex was abolished. The pupillary reflex was maintained. There was a slight left-sided palpebral ptosis. Then a line of de-



marcation formed. The blood Wassermann was positive and later the cerebrospinal fluid likewise was found positive. The arm was amputated at the lower third. An embolus was found in the humoral artery. During the night aphasia and paralysis of the extremities developed which were probably due to a cerebral embolus.

**Early syphilitic phlebitis of the upper extremity.**—Danel. Bull. méd., Paris, 1924, XXXVIII, 938.

During the secondary stage of syphilis the patient showed hardened veins. The cubital and the median of the left arm were mainly involved. There were no functional disturbances. Protoiodid of mercury pills cured the case quickly.

**Multiple syphilitic thromboarteritis.**—G. O. E. Lignac and A. W. Pot. *Nederlandish tijdschr. v. geneesk.*, Haarlem, 1924, LXVIII, 1125.

A sailor had contracted a chancre in 1915. In 1917 paralysis of the left side set in; at the time he had headache and lost consciousness. Speech was much impaired, the left eye could not be closed entirely, and from the left corner of the mouth dribbled saliva. The entire left side had become stiffened. The patient had formerly had malaria and dysentery. He was now 26 years old. The examination showed facial paralysis and the cremaster reflexes and the abdominal reflexes weaker on the left side than on the right. The same was true of the Achilles and knee reflexes. The foot clonus was present on the left side, and Babinski, periosteal triceps and biceps reflexes in the left arm were more marked than in the right. A spastic paresis of the left leg was demonstrable. The left portion of the body was hyperalgesic. Wassermann, Meinicke, and Sachs-Georgi tests were negative. Evidently there had been a focus in the right half of the brain, forming an encephalomalacial condition, with embolus, which caused a thrombus.

The patient was treated with potassium iodid, but the treatment had to be stopped several times on account of an itching red exanthema. Faradization was then applied. After four months the patient was dismissed improved.

A year and half later the patient entered the surgical clinic for a condition which had come on suddenly one week before during the night. Severe pain had set in in the knee. The thigh was parchmentlike and there was an abdominal contraction. The temperature was 38.3° C. and subicterus existed. Dullness was found over the liver, and the spleen could not be palpated. In the urine nucleo albumin, serum albumin, and urobilin were found. There were some leukocytes and erythrocytes in the sediment. The Wassermann reaction was still negative, but the Sachs-Georgi positive.



The patient died after 23 days. At post-mortem a grayish white thrombus was found filling the entire lumen of the abdominal aorta. The intima of the arteries was thickened and there were fibrillar connective tissue proliferations.

Syphilitic arteritis may develop three months or many years after the syphilitic infiltration. It generally is seen in younger individuals between 20 and 45 years of age. However, Dieulafoy has described a case of an older person.

**Results of investigations made at 350 cardiac autopsies of paralytics and 15 of tabetics.**—Ostmann. *Deutsche med. Wchnschr.*, Leipzig, 1926, LII, 1554.

Pathological cardiac changes were found much oftener than clinical reports had suggested. There were but 19.1 per cent which showed none; 31.5 per cent with syphilitic mesaortitis, of which 35 per cent were found in men and 28 per cent in women; in 17 instances there was additional aortic valvular insufficiency, and in 2 instances additional stenosis of the aortic valves. The average age of paralytics who showed mesaortitis was 44.4 years, the age being slightly higher in women. The time of survival of paralytics suffering from mesaortitis was 2.8 years, dating from onset of paralysis to death. The period which had elapsed between infection and death was 19 years average.

Aneurysmal dilatation or aneurysm was seen in 3.1 per cent of all cases and only in men.

Most of the author's cases had not been treated with salvarsan. A comparison is drawn between his figures and those of Coenen, whose reports date from the presalvarsan period. In that report there were 22 per cent of 199 cases, while after introduction of salvarsan there were 42.9 per cent of 147 cases with cardiac involvement. Bersch found (1923-24) 47 per cent of 32 paralytics suffering from syphilitic aortitis. Gürich and Finger have stated that there was an increase of cardiac involvement since the introduction of salvarsan therapy. Löwenstein, between 1919 and 1923, saw 33.1 per cent of 341 paralytics with aortitis. Further figures are given.

Mesaortitis was found in 26.6 per cent of the author's 15 tabetics, who had not been treated with salvarsan, while atheromatosis was seen in 20 per cent, sclerosis in 13.3, fatty degeneration in 13.3, and chronic endocarditis in the aortic valves in 33.3 per cent.

The author is under the impression that more cardiac disease develops in patients who are treated with salvarsan.

**Tabes dorsalis and syphilitic mesaortitis.**—F. Frisch. *Klin. Wchnschr.*, Berlin, 1925, IV, 406.



**Heart and arch by X ray in neurosyphilis.**—C. A. McDonald. *J. nerv. and ment. dis.*, New York, 1923, LVII, 509.

A study of the records of 40 cases of neurosyphilis at the outpatient department of the Massachusetts General Hospital shows signs of cardiovascular disease present in 90 per cent of the cases. The Röntgen ray examination given showed specific aortic disease present in 45 per cent of the cases, and arteriosclerosis of the arch present in 40 per cent of the cases. Five per cent of the cases showed other heart conditions under Röntgen ray examination.

**Aneurysms of cerebral vessels. Clinical manifestations of pathology.**—Harry L. Parker. *Arch. neurol. and psychiat.*, Chicago, 1926, XVI, 728.

In reviewing the literature the author states that syphilis seems to play a very small part in the formation of intracranial aneurysm. Fearnside reported 90 per cent of aortic aneurysms and 100 per cent of aneurysms of the other large elastic arteries as due to syphilis, yet only 6.25 per cent of the aneurysms of the small muscular arteries can be proven as due to syphilis. Other authors have reported many instances of the association of syphilis with aneurysm of the basilar artery, and Fearnside suggests the relatively large size of the artery is responsible for its susceptibility to syphilis by dilatation and the formation of aneurysm rather than by obliteration of its lumen.

**An X-ray study of the progressive changes in the lungs and aorta in tuberculosis with syphilis.**—Cleveland Floyd, H. K. Boutwell, and R. L. Leonard. *Am. rev. tuberc.*, Baltimore, 1921, V 588.

From the clinic of the Boston consumptive hospital. Floyd, Boutwell, and Leonard present study of tuberculosis with syphilis. Positive Wassermann, extrapulmonary lesions, continued negative sputum for the tubercle bacillus, and pulmonary signs found at the base or toward the hilum, are indications of pulmonary syphilis. The Röntgen ray picture is not one of certainty as to the condition present. The irregularity of outline, indefinite shape, and moderate density of the process in the lung are positive points in favor of this diagnosis.

All grades of the process occur, from slight localized broadening of the shadow to a dilation of the aorta with cardiac enlargement due to aortic regurgitation. Syphilitic infection, on top of an established pulmonary tuberculosis, stimulates the production of fibroid tissue formation. Routine Wassermann test in the clinic has shown that 8 per cent of the male patients have syphilis. Observations of the effect of syphilis upon the aorta show that where the treatment has been intensive a diminution of the size of the arch and a secondary effect on the heart is seen. If the treatment is irregular, the lesion advances to a point where no results are obtainable.



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**Wassermann test in prognosis of syphilis.**—E. Hess Thaysen. Ugeskn. f. Laeger, Copenhagen, 1923, LXXXI, 247; J. Am. med. assoc., Chicago, 1923, 1326.

Thaysen found syphilitic aortitis in 38 per cent of 150 necropsies. Among 60 cases of aortitis 22 had been without subjective symptoms. He thinks that in treatment of syphilis the emotional shock should be taken into consideration. The psychic shock to the patient on being informed that his disease is syphilis, that it is still uncured, is frequently so great that the etiology should be hidden if possible. The degree of the Wassermann reaction is not parallel with syphilitic aortitis and is of no value in prognosis.

**Intracranial aneurysms.**—Irving J. Sands. J. nerv. and ment. dis., New York, 1926, LXIV, 12.

Fearnside (Brain, 39:1916, Oct., 225) collected 44 cases of intracranial aneurysms in 5,432 post-mortems. No example of aneurysm due to or associated with a syphilitic infection occurred, while 96.2 per cent of aortic aneurysms were due to weakening of the arterial walls set up by the activity of syphilitic virus.

Case reported showed no history of venereal disease. Blood Wassermann was negative.

**Spontaneous meningeal hemorrhage; with report of seven cases.**—

Ernest M. Hammes, Minnesota med., St. Paul, 1926, IX, 305.

Although syphilis is the most frequent cause of aneurysm in the general arterial system, it less often produces this result in the cerebral circulation. This is probably due to the fact that in syphilitic infection of the cerebral blood vessels there is a greater tendency to proliferation of the intima (Huebner's endarteritis) with thrombus formation than to degeneration of the media and adventitia, with subsequent weakening and dilation of the blood-vessel wall.

Syphilis was not a factor in any of the cases reported.

**Gumma of the interventricular septum of the heart giving rise to heart block.**—J. Burton Cleland. Med. J. Australia, Sydney, 1927, I, 540.

Gummata of the heart are rare and in the case described of a male, aged 58, the gumma was of considerable size, being about 3.6 centimeters (1¼ inches) in diameter. It was situated in the upper part of the interventricular septum and formed a rounded mass which projected more particularly into the upper part of the right ventricle, interfering with the direct course of blood through the ventricle to the pulmonary artery, giving rise in consequence to cardiac murmurs.



**Syphilis of the nervous system and syphilitic aortitis.**—F. Frisch. *Klin. Wchnschr.*, Berlin, 1923, II, 1401.

Very little mention is made in literature of a combination of syphilis of the aorta and the nervous system. The author found 115 cases of syphilis of the nervous system in syphilitic aortitis. Among 115 cases aortic complications were found in 39 per cent, 29 per cent in paralysis, 48 per cent in tabes dorsalis, and 35 per cent in cerebrospinal syphilis. Among the 45 patients with aortic complications, 2 only had subjective symptoms, and these were not severe. One had pressure behind the manubrium sterni when 39 years old, and one, a man 58, suffering from tabes, had retrosternal and interscapular pain. This type of aortitis is generally benign. It may be subjected to severe antisiphilitic therapy.

**Syphilis of the central nervous system and the aorta.**—K. Löwenberg. *Klin. Wchnschr.*, Berlin, 1924, III, 531.

In the psychiatric university clinic at Hamburg-Friedrichsberg, 341 autopsies were made on paralytics. Among this group there were 228 who had no signs of aortitis; 113 had aortitis. Among those with cerebral syphilis 3 had aortitis and 6 had not. Generally the aortic involvement is slight and the patients rarely complain of cardiac or respiratory discomfort. Close examination generally will, however, reveal an aortitis. It is benign in most instances in cases of syphilis of the central nervous system. Often an involvement of the aorta is seen, but without valvular lesions or narrowing of the first portion of the coronary artery. The condition has run its course and gummata and infiltrations are absent. Instead there is tough scar tissue which is sometimes calcified. Sometimes there are inflammatory conditions in the media of the aorta, but aneurysm is rare, and so is cardiac failure as a consequence of aortitis. Aneurysm was found only nine times. In two instances aortitis evidently had a part in the death.

It has been found that in paralytics aortic disease may be a serious complication when malaria treatment is given.

Clinicians and psychiatrists agree, for the latter find 30 to 33 per cent of aortitis in paralytics and the clinicians find involvement of the nervous system in 30 per cent of the cases of aortitis. Most patients develop the clinical symptoms of aortitis between 35 and 50 years of age, and the time of incubation of this type of syphilis is about the same as that for paralysis.

The simultaneous occurrence of aortitis and syphilis of the nervous system is interesting from the point of view of constitutional studies.



**The incidence of syphilis of the aorta with interstitial and parenchymatous neurosyphilis.**—John H. Musser, jr., and A. E. Bennett. Arch. int. med., Chicago, 1924, XXXIV, 833.

"A clinical study of spinal fluids, obtained from 30 cases of syphilitic aortitis of which 14 were aneurysms, showed that 20 per cent had associated cerebrospinal infection.

"A comparative necropsy study of the frequency of associated late aortic syphilis with different varieties of neurosyphilis was done. In 102 cases of vascular neurosyphilis 38 per cent had late syphilitic aortitis and 8.9 per cent had advanced to the stage of aneurysm. While in 110 general paralytic patients 28 per cent had syphilitic aortitis with 3.4 per cent aneurysms and 26 per cent of 50 tabetic necropsies revealed syphilitic aortitis with no aneurysms.

"Advanced syphilis of the aorta and resulting aneurysms are more frequently associated with the endarteritic and meningeal (interstitial) form of cerebrospinal syphilis than with the parenchymatous (tabetic and general paralytic) variety. In the early stage of spirochetemia there is invasion of every aorta. In certain persons there occurs extensive vascular disease, probably the result of vasotropism of the *Spirochaeta pallida*. In others the aortic lesions are mild and the strain of spirochete has higher invasive qualities and attacks nervous tissue with resulting neuronie degeneration by the neurotropic strain."

**Combined vascular and parenchymatous neurosyphilis.**—C. M. Wilson. Proc. roy. soc. med., London, 1927, XX, 384.

Patient was admitted to hospital suffering from aphasia and weakness of right arm. A few months previously patient had noticed heaviness in right arm. One month later there was sudden loss of speech and power of right arm. Marked aphasia of motor type, flaccid paresis of right arm with reduced tendon reflexes, power in other limbs normal, flexor plantar responses, absent knee and ankle reflexes, and fixed pin-point pupils were discovered on examination. Discs normal; marked arteriosclerosis of retinal vessels. Other systems show emphysema of chest and considerable dilatation of right heart and ascending aorta, confirmed by skiagram.

Wassermann reaction in blood and spinal fluid negative. Nonne-Apelt negative; total protein, 0.035 per cent; cells per c. mm., 1.2; Lange 1, 3, 3, 2, 1½, 0, 0, 0, 0; benzoin 0, 0, 0, 0, 0, 0, 2, 2, 000.

**Lesions of the aorta associated with acute rheumatic fever, and with chronic cardiac disease of rheumatic origin.**—Alwin M. Pappenheimer and William C. von Glahn. J. med. research, Boston, 1924, XLIV, 489.

The histologic findings of the aorta in a series of 76 rheumatic cases and 77 nonrheumatic cases are compared with an equal number of syphilitic aortitis cases.



The following table gives the result of the study:

Media	Rheumatic	Syphilitic
Cellular infiltration.....	Absent or, where present, sparse. Localized to vicinity of penetrating vessels. Few lymphoid and plasma cells, and larger elements of undetermined origin.	Abundant masses in all portions of media; not confined to vicinity of preexisting vessels. Lymphoid and plasma cells predominating.
Scars.....	About penetrating vessels, in outer half of media. Scar tissue dense and acellular.	Large, patchy, loose, in any portion of media. Penetrating vessels usually not surrounded by cicatricial tissue.
Elastic fibers.....	Disrupted only in vicinity of penetrating vessels.	Extensive destruction corresponding to areas of syphilitic granulation tissue or to the scars resulting therefrom.
Adventitia.....	1. Aschoff nodules or cells may be present. 2. Loose accumulations of lymphoid and plasma cells. 3. Adventitial thickening.....	1. Aschoff nodules or cells never present. 2. Dense and compact accumulations of lymphoid and plasma cells tending to be concentrated about the vasa vasorum. 3. Adventitial thickening, often marked where there has been medial scarring.
Aneurysms.....	No proven case on record.....	Frequent.

**Unknown forms of arteritis, with special reference to their relation to syphilitic arteritis and periarteritis nodosa.**—Francis Harbitz. *Am. J. med. sc.*, Philadelphia, 1922, CLXIII, 250.

Harbitz describes in detail necropsy findings of four unusual cases of arteritis, and, for purposes of comparison, one case of cerebral syphilis with vascular changes of a peculiar character and of special interest in this connection, and one case of syphilitic coronary arteritis resembling tuberculosis.

**Treatment of luetic aortitis.**—Schottmüller. *Deutsche med. Wchnschr.*, Berlin, 1923, XLIX, 175.

Formerly the expectation of life of a patient with this condition, especially where an aneurysm existed, was about two years. Since the advent of salvarsan and the employment of continued salvarsan and mercury therapy, where these cases are recognized in the beginning and even in cases in more advanced stage, a clinical cure can be obtained. Some physicians do not approve of this method of treating this complaint. The author considers it the only treatment which can give a cure, and in support of this reports later developments in the series of cases he reported in 1919 (*M. Kl.*, 1919, No. 7). Treatment should be continued for at least three years.

In 1921 the author treated 20 cases. Four were diagnosed too late, treated too late, and died. Sixteen have been improved. Unless the treatment is continued, however, this improvement will be lost.

**Life expectancy with aortic regurgitation.**—Frederick A. Willius, and Julia Fitzpatrick. *Med. J. and rec.*, New York, 1924, CXX, 417.

A report on 463 cases of aortic regurgitation, 296 nonsyphilitic, 167 syphilitic. At the time of examination the degree of cardiac



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the treatment of choice in specific aortitis. Mercury, arsenic, and the iodids are often indicated. Sometimes patients are intolerant of mercury or arsenic or have not benefited from their use. Where the contraindications to other methods do not exist we should not eliminate other therapeutic methods. Each case must be individually considered. For instance, in a case of simple recent aortitis in a vigorous patient it may be preferable to choose the arsenobenzenes. Their more rapid action is not to be neglected. Like mercury, they can sometimes succeed where bismuth has failed or has not given the expected results. The author has employed mixed treatments; that is, he has followed courses of arsenobenzene with courses of bismuth, or between series of bismuth treatments tried mercury or the iodids. Until there is more information on the subject one must remain an eclectic, remembering that in a general way the choice of bismuth may, outside of other considerations, be justified by the fact that it is well tolerated.

**Symptoms and treatment of central vascular syphilis.**—Walter P. Anderton. *Boston med. and surg. J.*, 1923, CLXXXVIII, 377.

As to the symptoms of central vascular syphilis, one is apt to find complaint of cardiac pain, dyspnea, palpitation, vertigo in a patient about 45 years of age, occupied in a laborious pursuit, with or without history suggestive of syphilis. Physical signs of dilated aorta with or without aortic valvular disease, evidence of myocardial damage, positive Wassermann reaction and Röntgen-ray evidence go to complete the picture.

The active treatment of central vascular syphilis includes two factors—treatment of the causative disease and treatment of cardiac insufficiency. A standardization of treatment with sufficient elasticity to fit individual needs is to be recommended.

With this in view at the Presbyterian Hospital in New York, the antisyphilitic treatment has been divided into courses, each of which takes approximately six months. First the patient receives 6 grains of mercury. Usually this is administered in 1 gr. or  $\frac{1}{2}$  gr. dose of mercury salicylate intramuscularly in the buttocks, alternating the two sides at weekly intervals. Accompanying this the patient takes potassium iodid gr. CL a day, or a smaller dose when tolerance so demands. For six weeks following the mercury the patient often receives no antisyphilitic treatment or continues the iodid only.

Following the six weeks' rest from treatment, the patient receives an intravenous injection of one of the arsphenamin preparations once a week for six weeks. The dose of arsphenamin usually commences with 0.2 gm., or in some cases with 0.1 gm. or very rarely the 0.4 gm. If any arsphenamin reaction occurs we are apt to discontinue this part of the treatment for about three months and then



use neoarsphenamin in small doses. When the patient has received six doses of arsphenamin another rest of six weeks is allowed, during which time he may or may not report. The number of courses given is seldom less than three or four, and the stopping of treatment is usually guided by the effect on symptoms and the Wassermann reaction.

Patients with central nervous syphilis are apt to receive Swift-Ellis intraspinal treatment at two weekly intervals as the arsphenamin part of their second course.

Symptomatically the results of this antisyphilitic treatment have been gratifying. The pain, dyspnea, and asthma have been diminished and at times dispelled completely, and in most of the improved cases the strength of the Wassermann has been diminished or made negative. Nevertheless, there are some cases which respond very poorly to treatment.

The distinct cardiac treatment of these patients is in keeping with the usual treatment of patients with chronic cardiac disease.

**On the treatment of syphilis of the aorta.**—H. Schottmüller. *Am. J. syphilis*, St. Louis, 1925, IX, 1.

No other internal organ is so frequently injured by the spirochete as the aorta. Fraenkel found pathologic changes in the aorta in 50 per cent of all cases of late syphilis. Stadler found that in 211 cases of constitutional syphilis 82 per cent had typical syphilitic aortitis. Of the 211 patients, 117 died of aortic disease. The author's experience indicates a still greater percentage of aortic involvement.

Types of aortitis are differentiated into three classes: Aortitis supracoronaria, which affords the most favorable prognosis; aortitis coronaria, which is often amenable to treatment; and aortitis valvularis, which can be cured only if treated in the early stages.

It is not justifiable to institute intensive salvarsan treatment in every case of syphilitic aortitis; it is necessary to determine whether the condition involves other organs. Especially should intensive treatment be avoided if acute meningeal symptoms are present. Mercury treatment is indicated for the first four or six weeks, then neosalvarsan. Routine of treatment is outlined. Experience has shown that intensive and long-continued treatment of syphilitic disease of the aorta is valuable. Experience also has shown the necessity of giving consideration to even the slightest manifestations of the heart or of the vascular system. This applies particularly to patients of advanced age. Even though the Wassermann reaction be negative, every possible diagnostic aid should be employed to make an early diagnosis.



**The mechanism of toxic reaction of arsphenamin on the heart.—**

William D. Reid. J. Am. med. assoc., Chicago, 1925, LXXXIV, 883.

An electrocardiographic study of the action of arsphenamin on 11 patients disclosed changes consistent with a prolongation of the conduction period and a shortening of the refractory phase.

According to De Boer, these conditions in a heart whose metabolic condition is bad predispose to the onset of ventricular tachycardia and ventricular fibrillation.

If this conception is correct, arsphenamin is contraindicated in the treatment of patients with heart disease and syphilis. Bismuth subnitrate is suggested as a substitute.

**Syphilis of the small blood vessels of the brain.—C. I. Urechia and N. Elekes. Encéphale, Paris, 1923, XVIII, 240.**

The published cases are reviewed. The author gives a case of his own in detail.

From the clinical point of view this affection may appear under different aspects. It presents itself most often as one of the atypical forms of syphilis or of general paralysis, with a tendency to chronicity, a long duration (almost 20 years), and an intermittent decline. The clinical picture observed has been that of general paralysis, cerebral syphilis, schizophrenoid form, epilepsy, tabetic psychosis, mental confusion with agitation, mental debility, latent syphilis. Symptoms at the seat of the disease are rare; visual and auditory hallucinations are frequently encountered; speech disturbance is relatively rare; the pupils have been quite frequently found normal. The Wassermann reaction in the blood and spinal fluid is quite often negative. Albuminosis of the spinal fluid is almost always positive; lymphocytosis is generally weak and sometimes even negative. Colloidal reactions may also be negative. Stern's reaction and the leutin reaction in several cases were done and found positive. It is proved also that a positive reaction can become negative, or inversely. Kafka asserts that the reactions are positive in cases where one finds at the same time an infiltrative meningitis. Jacob's observations and those of the authors weaken this assertion. Endarteritis of the small blood vessels of the brain may be encountered also in congenital syphilis.

The pathology of the condition is discussed.

**Treatment of endarteritis obliterans syphilitica with intravenous injections of comminuted mercury.—Frank G. Young. Med. J. and rec., New York, 1924, CXIX, 453.**

The rarity of this disease, together with its bad prognosis, probably accounts for the fact that few cases are found in American literature.



Syphilis as a possible etiologic factor has long been recognized in France. Every case should be thoroughly investigated for syphilis. Particularly should the spinal fluid be examined, as it may be positive with a negative blood reaction. Endarteritis obliterans is often confused with Wier Mitchell's erythromelalgia, Raynaud's disease, and thromboangiitis obliterans, or Buerger's disease. Green has defined endarteritis obliterans as a "progressive thickening of the tunica intima without atheromatous degeneration." Endarteritis obliterans syphilitica may be considered a combination of neurosyphilis and vascular syphilis.

A case is presented of a man, aged 51, in which the diagnosis of endarteritis obliterans of syphilitic origin was made. Both legs were involved and amputation had been advised. Spinal fluid was 4-plus; blood negative. Pain in the legs and feet was extreme; there was loss of appetite, emaciation, and constipation.

As there was no gangrene present, amputation was postponed. The patient had been on a mixed arsenic and mercury therapy for a long time. As the results had been so unsatisfactory, it was decided to try a new form of finely divided mercury, mercoedel. Forty c. c. of a 50 c. c. dilution were given intravenously at four-day intervals for three doses. There was such relief from pain that narcotics became unnecessary. The veins were small and hard and the blood thick, making injections hard to give. After a two weeks' rest the injections were continued as before, four being given. During this period ulcers appeared on the scalp and lip. They broke down in about eight days, discharging pus profusely. Marked improvement of all symptoms followed. After a further dose of 40 c. c. of the 50 c. c. dilution and one of 50 c. c. the spinal fluid and blood Wassermann were negative. Treatment was continued, light doses of 40 c. c. of the 50 c. c. dilution being given in a period of three months. A gangrenous condition developing in the lower part of the left foot, the leg was amputated below the knee. At the end of three weeks patient was sufficiently improved to go home and later was able to go back to work.

**The treatment of substernal and precordial pain.**—Thomas F. Cotton. *Lancet*, London, 1926, I, 827.

With a history of syphilis, or if signs of this disease are present, the treatment should include the usual mercurial treatment with potassium iodid in 10-grain doses over a prolonged period. Each year a course of six or eight weekly intravenous injections of novarsenobillon, 0.6 gm., should be given. Diathermy, three treatments a week over a period of a month, is helpful in some cases.



**The management of the chronic cardiac.**—C. Lydon Harrell. *Virginia med. monthly*, Richmond, 1925, LII, 30.

Cases of chronic syphilitic aortitis, in addition to the usual treatment for myocarditis, should be given a four-weeks' course of mercury first, preferably by inunction. If the heart muscle has then gained sufficient tone, six doses of neosalvarsan may be given, beginning with 0.02 gm. and increasing each week until the maximum of 0.09 gm. is reached. The whole series should be repeated until the Wassermann is negative. The author has not found the results in these cases very satisfactory, though a few have done well under this treatment.

**Modern methods in the diagnosis and treatment of heart disease.**—

Thomas F. Cotton. *Canadian med. assoc., J.*, Toronto, 1926, XVI, 487.

"In aortic disease of specific origin potassium iodid and mercury are indicated, as in other forms of tertiary syphilis. These should be combined with intravenous injections of arsenic given in somewhat smaller doses than the dose usually given in this disease with no cardiac defect. I am accustomed to give once a year a course of 0.6 gm. of novarsenobenzol in a series of six to eight intravenous injections at weekly intervals."

**Cardio-aortic syphilis and its treatment.**—Thomas F. Cotton. *British med. jour.*, London, 1926, I, 855.

To determine the effect of specific treatment in cardioaortic syphilis an unselected group of 58 ex-service men with aortic syphilis were given treatment and kept under observation for five years. An approximately equal number of control cases was selected, closely resembling in age, symptoms, and signs the group of treated cases.

Since 1919-20 the treated cases have been given each year a series of six to eight intravenous injections of novarsenobillon, 0.6 gm. at weekly intervals. There have been no serious accidents. Most of the patients were given mercury by inunction; a few took hydrarg. cum creta, 1 gr. t. i. d. All received potassium iodid, 10 gr. three times a day.

The average age of the treated patients who died is 45; of the untreated, 43. Of the treated patients, 24.1 per cent have died, and of the untreated, 33.9 per cent, a difference of 9.8 per cent.

**The value of specific treatment in cardiovascular syphilis.**—Bernard I. Goldberg. *Boston med. and surg. J.*, 1925, CXCI, 768.

A good review of the literature with bibliography.

Arsphenamin is the best treatment and should be given whenever possible. The initial dose should be small and gradually increased



as tolerance is established. If intolerance can not be overcome mercury or bismuth may be given and the courses prolonged. Potassium iodid is given in increasing doses reaching 100 gr. or more daily, with rest intervals of six weeks. Neoarsphenamin may sometimes be used when arsphenamin is not well borne.

**Cardiovascular syphilis following adequate early treatment of the original infection.**—J. Rowan Morrison. *Urologic and cutan. rev.*, St. Louis, 1926, XXX, 205.

One case is reported in which syphilitic aortitis developed in spite of three years of treatment with mercury and potassium iodid. It is well known that neurosyphilis sometimes develops before the appearance of secondary manifestations; this is probably also true of cardiovascular syphilis.

The question is raised of the effect which modern treatment has on the development of cardiovascular symptoms.

**Specific treatment of cardiovascular syphilis.**—M. Castro. *Arch. Brasileiros de med.*, Rio de Janeiro, 1925, XV, 64.

Review of the literature on the various antisyphilitic remedies.

**Anatomical development of aneurysms and reasons for the inefficacy of antitreponemic treatment.**—Renaud. *Jour. des praticiens*, Paris, 1925, XXXIX, 125.

Generally aneurysm is congenital syphilitic, according to the author, and is treated by antisyphilitic remedies. It is, however, not cured and the improvement is a delusion. The pockets can not be overcome. In three cases studied by the author aneurysms took on the form of hematomata and not of sclerogummatous lesions. Inflammation is not present. Though present in the beginning, treponema later plays no part.

**Cardiovascular syphilis.**—Frank I. Ridge. *Ann. clin. med.*, Baltimore, 1924, II, 374.

The author is of the opinion that specific treatment is of little value. Arsenicals are contraindicated in the majority of cases. Several deaths seemingly due to the administration of small doses of neosalvarsan have been seen.

Three cases are recorded.

The subjective symptoms most frequently described are substernal pain, varying from mild oppression to attacks of anginal spasm. These cases are usually advanced aortitis with myocardial involvement. The second group of symptoms is that of paroxysmal dyspnea, usually sudden in onset and independent of exertion. These are due to heart-muscle involvement. Frequently symptoms referable to other visceral organs are more common, especially the stomach and



liver function. These symptoms, together with the positive Wassermann reaction and the meager findings of a physical examination, justify the diagnosis of cardiovascular syphilis.

**Aortic pain and antisypilitic treatment.**—Charles Greene Cumston. *Am. J. syphilis*, St. Louis, 1924, VIII, 349.

Unless cardiac cachexia exists, specific antisypilitic treatment should be undertaken in cardiac conditions of syphilis. But when cardiac and aortic lesions are advanced, mercury and potassium iodid are the proper drugs to employ; arsenic should be avoided.

**Two cases of syphilitic heart disease.**—H. Jacobaeus. *Ugesk. f. Laeger*, Copenhagen, 1924, LXXXVI, 243.

A man, aged 41, who had been a syphilitic for 13 years was treated with 120 inunctions. During the second year he felt well. Before entering the hospital he suffered from dizziness, shortness of breath, and tachycardia. In another hospital he had been given three salvarsan injections in doses of 10, 30, and 40 cg. Diarrhea was the consequence, and the patient soon was obliged to stop work and then was given 0.45, 0.60, and 0.60 gm. neosalvarsan. The Wassermann reaction was 60 and 100. Next day a sudden pain occurred in the abdomen, with diarrhea, dizziness, tachycardia, and insomnia. There was a typical aortic insufficiency with cardiac dilatation, pulmonary stasis, swelling of the liver, icterus, and albuminuria. The patient died.

The aortic valves were involved during the syphilitic disease and there was organic stasis with signs of arsenic intoxication. The author warns against high salvarsan doses in these cases. Small doses should be given at first. The same applied to another man, aged 50, who had likewise been a syphilitic for 13 years. Oral papules were the first symptoms and the treatment was neglected. The Wassermann reaction had been positive for four years, when mercury inunctions were made. The man's clavicle became swollen, blood pressure was 120, and Wassermann reaction 20 and 100 plus. The röntgenogram showed a typical aneurysm of the innominate artery. Mercury iodid and potassium iodid solution were given, but the symptoms grew worse. Then 30 cg. of neosalvarsan was injected into the cubital vein. Four weeks later 45 cg. of neosalvarsan again caused pain. The next dose was again spaced at four weeks and the patient improved slowly and entirely recovered.

**The treatment of cardiovascular syphilis.**—Paul F. Stookey. *J. Missouri state med. assoc.*, St. Louis, 1924, XXI, 370.

Specific treatment can not restore tissues already destroyed by syphilitic infection. Treatment can only arrest the degenerative process. The more advanced the underlying condition the more



doubtful the response to treatment. In older persons who have suffered from syphilis for a long period treatment should be administered with caution; neoarsphenamin should not be used. In cases that show marked embarrassment of the cardiac musculature with but little change of the aorta neoarsphenamin is not well tolerated.

Younger persons whose cardiovascular syphilis is of recent date are benefited by vigorous treatment. Cases which respond to mercury treatment subsequently tolerate neoarsphenamin well.

It is in the group of early cases clinically diagnosed as aortitis, if diagnosis is established before objective signs other than some slight anomaly of the aortic sound has developed, that the most brilliant results of treatment are experienced.

The best indication of the response to treatment is the subjective sensations of the patient. In cases that offer comparatively good prognosis the relief from pain comes soon after treatment is instituted. The disastrous result occasionally encountered in myocardial cases, following neoarsphenamin, is a true Herxheimer reaction.

Hunt, in the discussion, stated that he believes only mercury and the iodids should be used in treatment.

**Old syphilitic myocarditis.**—E. Lenoble. Bull. acad. de méd., Paris, 1921, LXXXV, 703; J. Am. med. assoc., Chicago, 1921, LXXVII, 494.

Lenoble states that in this condition specific treatment is futile and may do harm. The onset of disturbance is abrupt and violent and the periods of improvement brief. There may be a general weakness, which seems to be an essential characteristic of neglected syphilis. There is dyspnea on exertion and sometimes intense cyanosis of face and extremities. The attacks recur frequently, and there may be precordial pains of the angina-pectoris type. Death occurred suddenly in one of his nine cases of this kind.

**Syphilis of the heart and the aorta.**—Brin and L. Giroux. Abstracted in Jour. des praticiens, Paris, 1924, XXXVIII, 441.

The authors prefer cyanid of mercury injections for syphilis of the heart and the aorta. There may be some discomfort and enteritis following this treatment, but that soon disappears. For 12 days 1 cg. is given, then an intermission of 15 days is made and treatment resumed. If discomfort persists, the dose is reduced from 1/100 to 1/200 of the solution and inject 2 c. c.

The enteritis of cyanid appears in the form of dry colic, colic with diarrhea, or dysenteriform colic. If the enteritis is to be suppressed, glycerophosphate of calcium, two tablets 50 cg. each, and a few drops of laudanum are of use.

Instead of the intravenous injections, biniodid or benzoate of mercury are given intramuscularly.



Binioidid of mercury-----	gm--	0.10
Sodium iodid-----	do--	0.10
Boiled water Q. S-----	c. c--	10
Benzoate of mercury-----	gm--	1
Sodium chlorid-----	do--	2.50
Sterilized water Q. S-----	c. c--	100

**Heart failure: Preventive treatment.**—John Parkinson. *Lancet*, London, 1923, I, 917.

"A syphilitic history or a positive Wassermann reaction, in the absence of a rheumatic history, gives the key to a rational treatment for preventing heart failure. It is a tertiary lesion in a dangerous place. Hutchinson's pill (hyd. c. creta, pulv. ipecac, co., aa gm. 1) t. d. s., and a bitter mixture, containing potassium iodid gm. 10, also t. d. s., is convenient for prolonged administration. In cases not progressive or too advanced, after a month of such treatment the use of salvarsan should be considered. If decided upon, novarsenobillon intravenously, 0.3, 0.45, 0.6, 0.6, 0.6, 0.6 in successive weekly doses is suitable. By antisyphilitic treatment we may postpone or prevent not only heart failure in its ordinary form but the special dangers of angina pectoris and aneurysm."

**Difficulties in the treatment of syphilitic aortitis.**—H. Bonnin. *Gâz. sc. méd. de Bordeaux*, 1926, XLVII, 3.

Generally treatment with mercury, bismuth, and arsenic is not well tolerated by patients with syphilitic aortitis with renal and cardiac insufficiency. The remedies are tolerated in the above sequence. These patients have become purely cardiac patients. Where the remedies can be employed function is improved. Complete retrocession is rare, but slight regression and arrest of further development must be considered as excellent results. Treatment must be continued for a long time. Insufficient or intermittent treatment often occasions severe attacks. Early syphilitic aortitis is precarious and tolerance poor. The patient remains in a doubtful state. Cardiac lesions must be examined for syphilis in order to avoid disappointment when treating.

**Syphilitic aortitis with special reference to treatment.**—Louis Potheau. *Internat. clinics*, Philadelphia, 1924, II, 107.

In every case of aortitis syphilis should be suspected, and in every case of syphilis aortitis should be thought of. In 330 cases of simple thoracic aortitis Etienne found 268 with syphilis. Guilly published statistics of 233 cases of paresis with 51 instances of aortitis. Aortitis has been found in cases of congenital syphilis presenting the same lesions as in the acquired form.

The treponema has been found in aortic lesions by several observers. It is during the secondary stage that the germ invades the aorta



and settles in the walls, producing a mild, latent lesion which assumes serious manifestations in the tertiary period.

The signs of aortitis are variable. Dyspnea, pain which may assume the type of angina pectoris or painful palpitations, or may radiate to the epigastrium, raising of the aortic dome, extension of the area of cardiac dullness, elevation of the subclavian above the clavicle, and a diastolic click of the second sound confined to the aortic area. Radioscopy affords the surest means of diagnosis. The author's treatment comprises several series of intravenous injections of mercury cyanid and novarsenobenzol with a complementary iodine treatment, potassium iodid by mouth or intramuscular injections of an oily preparation. The dosage should be determined by the patient's general condition, the extent of the lesion, and above all, by the condition of the myocardium.

**Stokes-Adams disease. Modification of conductivity in a nonspecific patient in the course of neosalvarsan treatment.**—G. Bickel. *Arch. mal. du coeur.*, Paris, 1925, XVIII, 39.

On the assumption of heart block being syphilitic, many clinicians have adopted the habit of giving energetic antisyphilitic treatment even where seroreaction and the case history do not suggest it.

In rare instances a case may be saved by this procedure, which is, however, not without danger. Stokes-Adams syndrome is due to various conditions and is a complex reaction. Not always is a gumma of the bundle of His found. One has acted as though the difficulty in conductivity formed the clue and were the essence of the disease forgetting that slow pulse and syncope are later complications of preexisting morbid conditions which may have existed for a long time.

Case: A man, aged 48, robust and very stout, had complete auriculoventricular dissociation without any signs of old or recent syphilis. Test treatment was given. No favorable results were obtained, but aggravation and sudden death a few weeks after treatment was stopped. The blockage of the cardiac stimulus along the bundle of His in the electrocardiogram ran parallel with the treatment. It continued for two months after treatment.

Many would consider this a Herxheimer reaction due to liberation of toxins of destroyed spirochetes and proof of syphilitic etiology. The author considers this explanation unsatisfactory. If it were correct, the symptoms should have improved by treatment. He thinks that the Stokes-Adams syndrome was the result of excessive adiposis. The man weighed 117 kg. The heart was much increased in size.

Fuchs saw a case of heart block from salvarsan, given to a patient without clinical syphilitic symptoms during the secondary stage, two months after treatment had been stopped and after the cutaneous



symptoms had disappeared. This was too late to consider it a Herxheimer reaction.

Ehrlich himself warned against the use of salvarsan in cardiac patients.

**Syphilis of the heart.**—Görl. *Dermat. Wchnschr.*, Leipzig, 1924, LXXVIII, 141.

A man, aged 46, who knew nothing about syphilitic infection, had pain in the gastric region independent of meals and was easily fatigued. Pulse was not the same on both sides and rapid. The heart sound extended beyond its normal limits, especially on the right side. There was dyspnea upon exertion. The cardiac limits diminished after potassium iodid and bismogenol had been given and the function became normal excepting some extra systole.

Aortitis may be treated with salvarsan, but in myocarditis mercury and iodids or bismuth must be used.

**Prognosis in cardiovascular syphilis.**—Paul F. Stookey. *Proceedings Kansas City Academy of Medicine*, meeting January, 1926. *J. Missouri state med. assoc.*, St. Louis, 1926, XXIII, 277.

Patients suffering from cardiovascular syphilis are grouped in three classes according to the response to treatment. There are those who are definitely made worse by treatment. Extreme caution in administering drugs will reduce this group to a minimum. About 60 per cent of all patients belong to the second group—those who show considerable subjective improvement, pain is greatly lessened. The span of life may be lengthened. A small group showed excellent results following treatment. While there is no organic improvement, relief from cardiac pain is complete.

Treatment recommended consists of small doses of mercury and potassium iodid administered over a long period of time.

**Prognosis in organic heart disease.**—George W. Norris. *Am. J. med. sc.*, Philadelphia, 1924, CLXVIII, 781.

*Syphilitic cardiovascular disease.*—"In the first and second stages prognosis is good unless specific resistance to arsphenamin is present. This is even so in cases in which cardiac drugs alone have afforded but little benefit. If, however, the combined treatment yields but little relief, the ultimate prognosis as to further improvement or cure is definitely bad. (Brooks.) Relapse after marked improvement is prognostically bad. Arrhythmia uncontrolled or with but little improvement has also an ominous augury. We must assume a permanent myocardial injury in all tertiary cases and advise accordingly. In the tertiary stage arsphenamin and mercury are evanescent in effect. The danger of a Herxheimer reaction necessitates small doses and hence long treatment. Eradication of the spirochetes in their



protected position is difficult. Nearly 70 per cent of Longcope's cases died within two years. Seventy-five per cent of all cases of aortic insufficiency in adults are syphilitic. Eighty per cent of these occur in men. Among untreated cases 30 per cent develop aneurysms. Thirty per cent have retracted valves and as a rule attention-arresting symptoms appear about 15 years after the initial infection."

**A case of active syphilis and positive Wassermann reaction 62 years after infection.**—Presented by Boas. Fifth Congress of the Northern dermatological society, Stockholm, June, 1922. *Arch. dermat. and syph.*, Chicago, 1923, VII, 714.

The patient had originally been treated with potassium iodid; he had had no clinical symptoms. He developed an aneurysm of the aorta and a 1-plus Wassermann reaction 62 years later.

**Thrombosis of the spinal vessels in sudden syphilitic paraplegia.**—Mon-Fah Chung. *Arch. neurol. and psychiat.*, Chicago, 1926, XVI, 761.

The author reviews the literature and calls attention to the frequency of sudden paraplegia in syphilitic Chinese patients, presenting two cases in which the vascular lesions are clearly demonstrated, one involving especially the arteries and the other the veins. Identical changes are produced in the cord in each case.

Thrombosis of one or more of the important spinal vessels is the mechanism of sudden syphilitic spinal paraplegia. The frequency of the involvement of the posterior aspect of the cord as compared with the anterior may be accounted for by the relative size of the blood vessels and their vulnerability to the attack of the syphilitic virus.

**Arterial embolism. An unusual complication following the intramuscular administration of bismuth.**—John A. Gammel. *J. Am. med. assoc.*, Chicago, 1927, LXXXVIII, 998.

Three cases are reported, the first two of which were almost identical, the third more alarming, but evidently attributable to the same underlying cause. In each of two cases, during the first 24 hours after intramuscular injection of 1 c. c. of potassium bismuth tartrate, 20 per cent, there developed at the point of injection an extremely painful swelling, which enlarged gradually. This swelling was diffuse and more superficial than in a beginning abscess; there was considerable local heat. A bluish discoloration covered the greater part of the buttock. It resembled a network with diffuse bluish meshes of about 2 cm. in width. In one case a similar area was seen also on the lateral abdominal wall. Rest in bed and hot applications constituted the treatment. Within three weeks condition subsided.



The third patient had been treated with 9 arsphenamin, 79 mercuric salicylate, and 22 bismuth injections during the past four years. Immediately following the last injection of bismuth (1 c. c. of potassium bismuth tartrate) his foot became numb; pain in the hip developed eight hours afterwards. One week later the entire right buttock was swollen and tender and showed the subcutaneous bluish network. Paralysis of the nervous peroneus was evident, and the patient complained of shooting pains down to the ankle. Rest in bed and hot applications were advised. One week later the lesion was brown, with two areas of black necrotic skin in the center. Swelling and tenderness were diminished. Patient was admitted to the hospital, and during the week the lesion gradually darkened, the skin became necrotic, and on removal of the slough the muscle was exposed. Treatment consisted of potassium permanganate compresses 1:4,000, ointment of ammoniated mercury, silver nitrate, and exposure to light and heat. Epithelization was very slow. Improvement in other symptoms is noticeable also.

The literature is reviewed. Freudenthal, in his paper on local embolic bismuth exanthem, first described this condition. Following the intragluteal administration of bismuth subsalicylate (bismugenol) he observed general malaise and reddening and swelling of the buttock with pain radiating into the leg. Around the site of the injection there was a localized exanthem resembling a livedo racemosa with a tendency to necrosis in certain parts. Histologic examination revealed cutaneous arteries blocked with the needle-shaped crystals found on microscopic examination to be a suspension of bismuth subsalicylate. From these observations he concluded that the drug had been injected into a deep artery and that the cutaneous arteries were embolized by the crystals subsequently. Perivascular inflammation results and the violent pain might be explained by ischemia.

The author concludes that more careful technic may reduce such accidents to a minimum. (The three cases reported were distributed over a series of 25,000 injections of bismuth.) The fact that on aspiration blood is not obtained is not, however, an absolute safeguard.

**Modern clinical syphilology.**—John H. Stokes. W. B. Saunders Co., Philadelphia and London, 1926; Chapter XIX, "Syphilis of the Cardiovascular System," pp. 828 and 819.

Page 828:

*"Uncritical use of the diagnosis 'rheumatism.'—*The more uncritically the term 'rheumatism' is used the larger will be the proportion of patients who escape through this loophole and develop the late complications of cardiovascular syphilis. I have pointed



out in previous chapters how well an early syphilitic infection with arthritic manifestations, in which ostealgias, myalgias, hydrarthroses, etc., are indiscriminately jumbled, can imitate 'rheumatism' clinically. Even to the examining eye deception is easily possible, to say nothing of the untrustworthiness of the patient's history. In an examination of the complaint of 'rheumatism' in the present cross section it was found to resolve itself into almost everything imaginable, from true multiple arthritis following scarlet fever and repeated attacks of tonsillitis to the pain of a slowly developing subclavian aneurysm without aortic signs and the neuritic pains of early tabes dorsalis. The physician who asks his patient if he has had rheumatism and tonsillitis and then proceeds to remove his tonsils for the treatment of aortic endocarditis after obtaining a single negative blood Wassermann reaction may be overlooking a good history of syphilis in disguise and missing syphilitic aortitis at the time when treatment for syphilis will be far more likely to check the trouble than tonsillectomy.

"It is worth while to recall, too, the value of a critical inquiry into the question of gonorrheal arthritis in patients who give a history of 'rheumatism.' This does not suggest that the valvular lesion is gonorrheal in origin, but that chronic gonorrhea with its prostatic complications is a fertile source of rheumatic symptoms that may mislead the history-bound examiner into overlooking the underlying syphilis in a case of aortic endocarditis. In considering the cause of an aortic murmur, therefore, the examiner should at least palpate the prostate before accepting a history of rheumatism as of bona fide streptococcal or rheumatic origin, and hence the cause of the aortic lesion.

"A high proportion of the patients, 120 (83 per cent) with full venereal history, in this cross section had had gonorrhea. Thirty-seven (20 per cent) gave histories of rheumatism of one sort or another. Thirteen (7 per cent) gave a definite history of rheumatic fever, or postscarlatinal arthritis. Of the 37 patients who gave a history of 'rheumatism' 29 had had gonorrhea or syphilis or both, 23 had had gonorrhea, 19 had had both gonorrhea and syphilis, 12 could give no history of either, 5 had had gonorrhea only, 5 had had syphilis only, 23 had had positive blood Wassermann reactions, 5 had positive spinal fluid, and 5 had neurologic signs of syphilis. Of the 13 patients who had had definite rheumatic fever or postscarlatinal arthritis in 4 the rheumatism followed gonorrhea (not necessarily immediately), and in 5 the rheumatism followed syphilis (not necessarily immediately).

"Nine of 13 patients had some plausible explanation of their rheumatic fever besides streptococcal infection. In this group of



13 patients were 2 in whom the cardiac condition was almost certainly rheumatic, and 1 in whom it was impossible to decide whether rheumatic fever was responsible for the condition, although the patient had *tabes dorsalis* and may have had coincident streptococcal infection with syphilis.

"The history of rheumatic symptoms may, therefore, be no small part of the story of a patient with syphilitic aortic valvulitis, and greater care should be exercised in ascertaining the clinical importance of the rheumatic factor. \* \* \* Syphilis may emerge from behind an apparently fair case of 'rheumatism,' with the prompt recovery of the patient under treatment for the former. Whether (as is by no means inconceivable) a streptococcal or even a gonorrheal infection may not at times participate in or contribute to the development of a syphilitic aortic lesion is worth considering. In view of what seem to be occasional false positive blood Wassermann reactions in patients with septicemia and subacute bacterial endocarditis, the production of 'pseudosyphilis' by the streptococcus, as well as the production of 'pseudorheumatism' by syphilis, deserves fuller study."

Page 819:

"Allbutt's monograph, the volume by Hirschfelder, and the important publications of Brooks, Longcope, Elliott, Pardee, Reid, Hoover, and recently of Willius, should be read by the American student seeking familiarity with the clinical aspects of syphilis of the cardiovascular system. Hubert, Frandel, and Schottmüller present the continental point of view. On the pathology Warthin and Klotz have made particularly stimulating contributions. Lancisi is credited with associating aneurysm with syphilis clinically in 1724. Wagner, while still confusing the disease with atheroma, made an accurate macroscopic study, and Dohle's description connected the pathologic picture with syphilis in a young man suffering unmistakably from the infection. Welch, the British observer, is credited by Allbutt with the full establishment of clinical knowledge of the disease by his publication in 1875 of a study of 117 cases of 'fibroid aortitis,' in 46 per cent of which syphilis was definitely present. The finding of the *Spirocheta pallida* in the aortic wall was first accomplished by Reuta in 1906, by Benda in the same year, by Schmorl in 1907, and by Wright and Richardson in this country in 1909. Warthin, in 1916, in his report of 75 cases, emphasized the patience and persistence required in this search. Reid reports that the organism was found in 11 of 41 cases examined for the purpose in the Massachusetts General Hospital. The aortitis of congenital syphilis, discussed elsewhere, has been recognized since the observa-

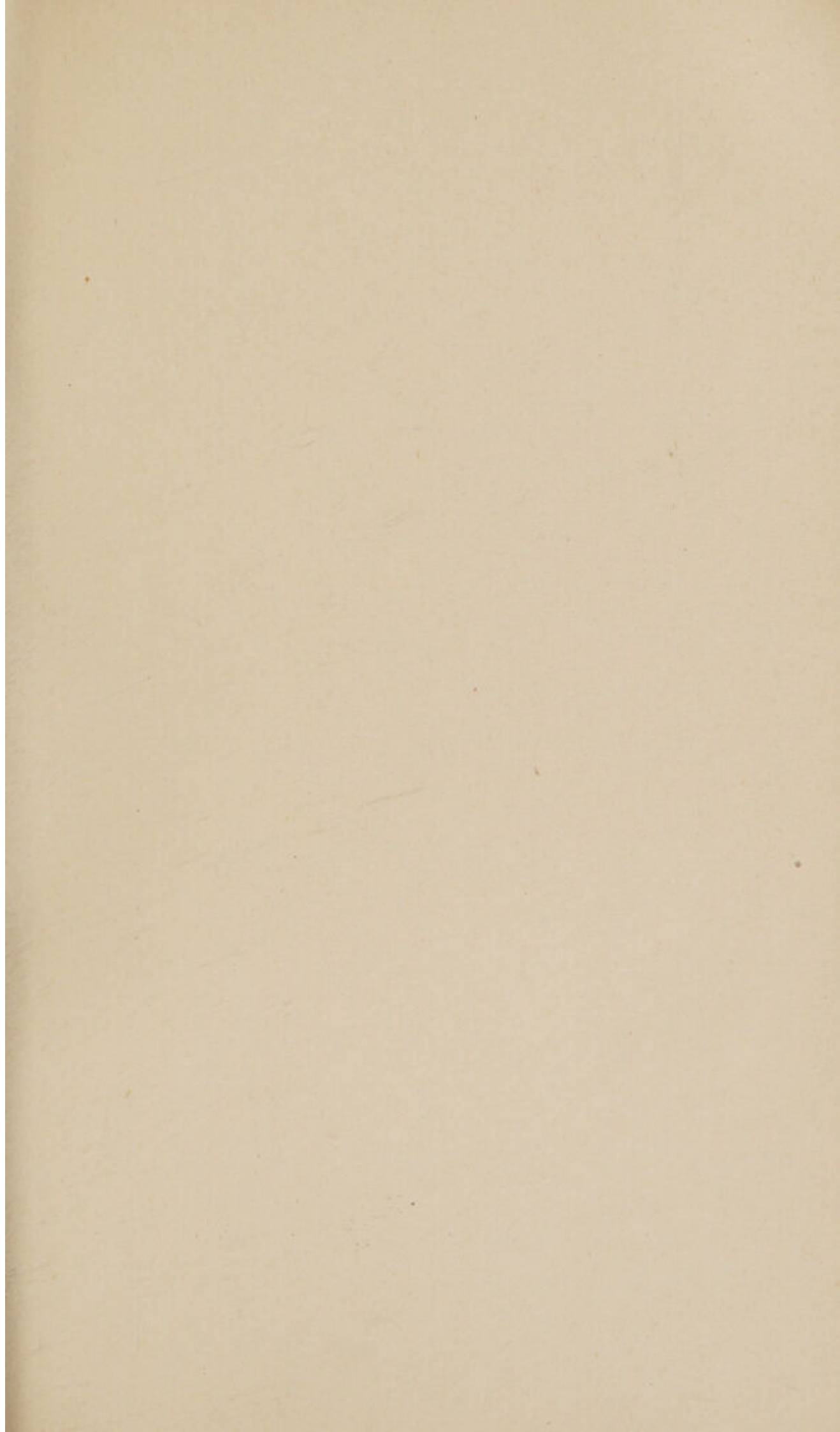


tions of Wiesner in 1905, and the abundance of the organism in the involved tissues, in spite of the relative paucity of clinical findings, has been confirmed by Rach and Wiesner and Warthin. Typical lesions have been described by Klotz."

This compilation contains references to the articles which had reached the Venereal Disease Division on July 1, 1927.







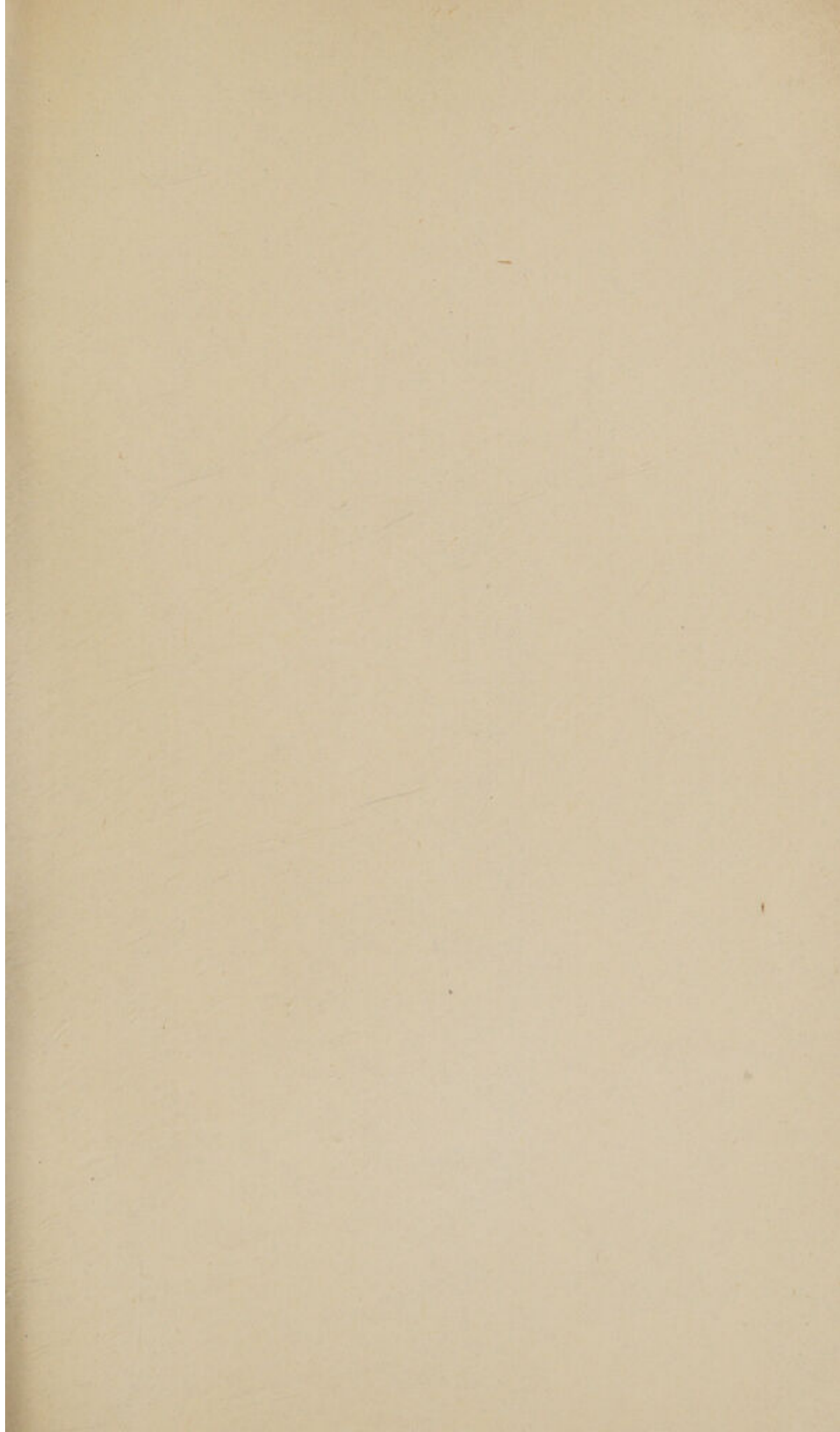


The following is a list of the names of the persons who have been appointed to the various committees of the Board of Directors of the United States National Bank, for the year ending December 31, 1901.

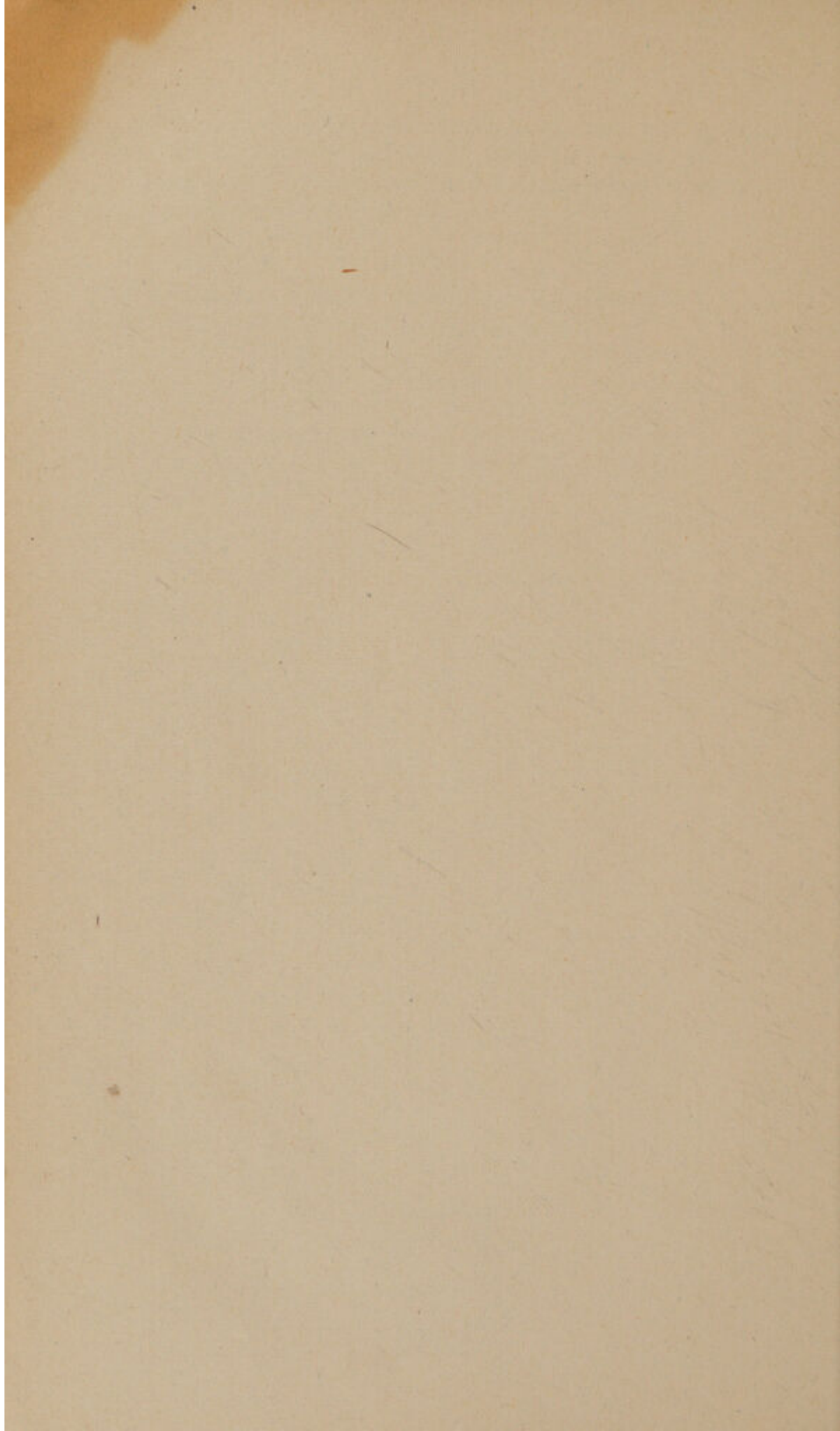
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