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VISCERAL SARCOMATA: CASES OF SARCOMA OF THE STOMACH, HEART, MEDIASTINUM, ETC.

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The inoperable visceral sarcomata constitute a group of tumor cases of very great interest on account of their comparative variety, multiplicity of type and tendency to spread by metastasis. In adding five cases to the literature I have considered mainly the clinical aspects of each, with comments upon the relative frequency of similar growths, as far as the meager knowledge of the subject permits.

Case I. *Melanosarcoma of Eye and Liver.*—The occurrence of melanotic sarcoma of the eye and liver is sufficiently rare to make the following case of exceptional value. The patient was a housewife, 34 years of age, whose heredity and previous personal history was unimportant. When first seen she presented a tumor of the left eyeball (Fig. 1) and a very large liver, in which numerous hard tumor masses were easily palpable. The eye symptoms covered a period of three years, commencing with darting pains and failure of vision in the left eye. Six months later the patient was operated upon for the result of an iritis and glaucoma. Subsequently hemorrhagic spots appeared in the sclera, and for

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the past year a tumor was observed protruding from the outer anterior surface of the eyeball and accompanied by much pain. Vision in the right eye remained normal. The patient's general health and

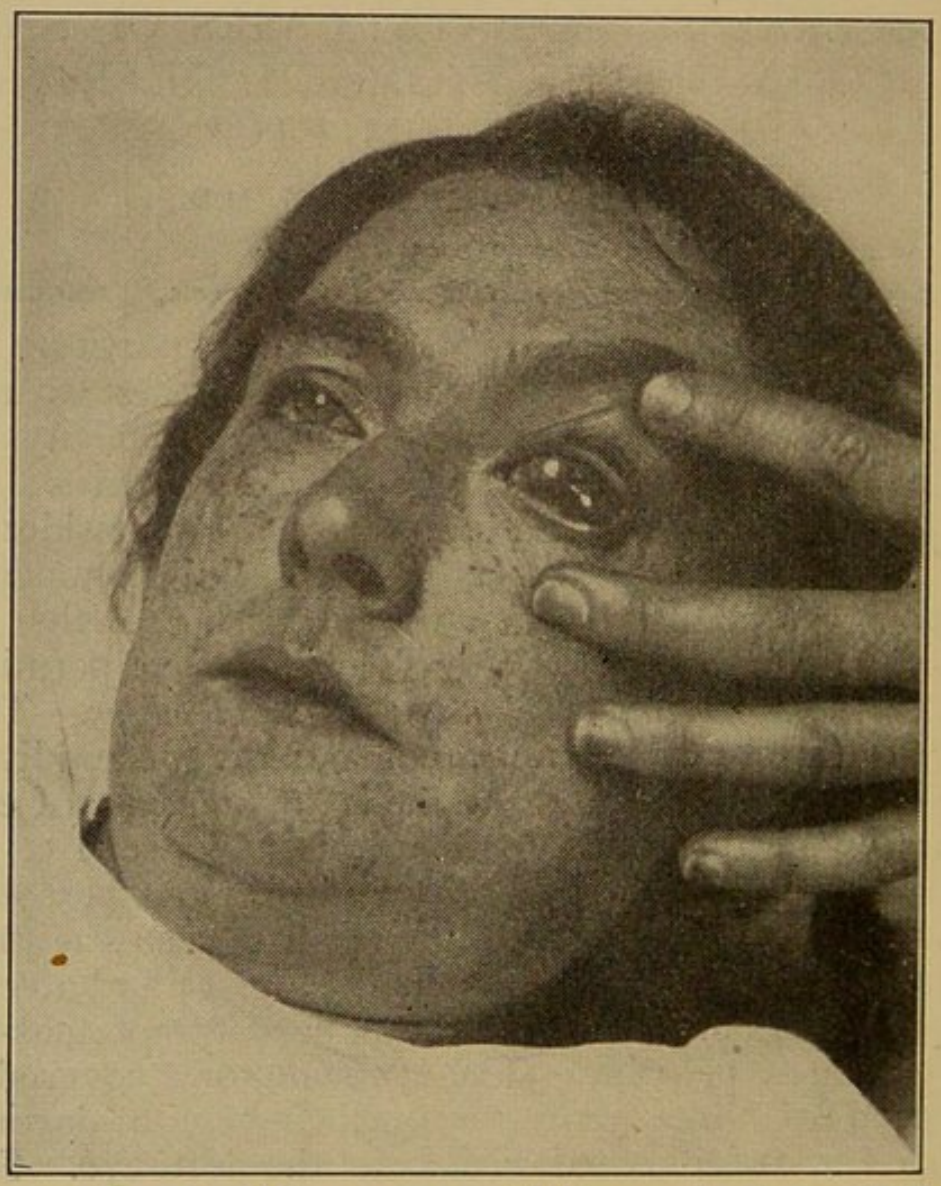

FIG. 1.—Case I.—Melanosarcoma of left eye, showing protruding tumor.

nutrition were remarkably good until within a month of her admission to the Presbyterian Hospital, when she had frequent nausea with vomiting

of mucus and sometimes blood, especially after eating. Examination of the abdomen revealed no pain or rigidity, but the liver, which extended almost to the pelvic brim, caused considerable bulging of the abdominal wall, over which area, as well as upon the face, there was much dark brown pigmentation in spots and plaques. Subsequently jaundice developed, there was hemorrhage from the gums, and the patient died from asthenia, with delirium, cyanosis and dyspnea. The autopsy, reported by Dr. Meakins, showed a melanosarcoma of the left eye, liver, perihepatic glands and pancreas. The spleen was normal, but the heart and kidneys presented fatty degeneration. Although there had been much hematemesis, the stomach exhibited merely a few submucous hemorrhages. The tumor of the left eye was black in color and projected at the outer side of the pupil 3 mm. above the conjunctiva. The eyeball was filled with a semi-fluid sanguineous mass. Section of the tumor revealed closely packed large, irregular spindle cells, in alveolar arrangement, but with very little stroma. Within and around the cells were masses of blood pigment.

The liver weighed 6,500 grams and measured 38 cm. in vertical diameter and 10 cm. in thickness. The transverse diameter was slightly less than the vertical. (In the accompanying photograph (Fig. 2) a normal liver is also shown for comparison). The liver stroma was nearly all replaced by tumor cells, identical in structure with those in the eye, but in parts the cells were deeply pigmented, in parts free from pigment, and in other areas there was pigment alone. Between the tumor lobules there was dense fibrous tissue. The glands at the liver hilum and along

the pancreas showed similar tumor structure. The hepatic capillaries were smooth and glistening, mottled blood-red. The liver tissue appeared firm on section, but in some of the hemorrhagic areas an inch in diameter there was a semi-fluid mass. The pancreas presented small hemorrhagic nodules.

Striking features of this case were the long duration of the eye symptoms (three years), the preservation of nutrition in much greater degree than is usual with the carcinomas of the liver, and the absence of involvement of the stomach, despite the frequent hematemesis.

As the patient was not seen until within a fortnight of her death, it was difficult to determine whether the primary focus of disease was in the skin, eye or liver, but it is fair to assume that it was in the eye, for there was no history of an early pigmented growth in the skin, the eye symptoms were known to have lasted three years, and jaundice from compression did not appear until shortly before death. Moreover, primary melanotic sarcoma of the liver is almost unknown, and Hanot, in a review of the subject, could find only one authentic example. The coincident and relatively frequent involvement of the eye and liver is as obscure a morbid phenomenon as the origin of this rare form of tumor itself. Dr. N. R. Norton has lately informed me of a similar case of eye-liver association in sarcoma occurring at the Lincoln Hospital. John S. Thatcher[1] reported a case of melanosarcoma of the eye in which the liver was secondarily involved, and another of melanosarcoma of the liver alone.

Hirschberg (*Berl. klin. Woch.*, 1905, Nos. 4 and 5) reported two cases of melanosarcoma of the eye in which metastases were first observed in the liver fully 9 years later.

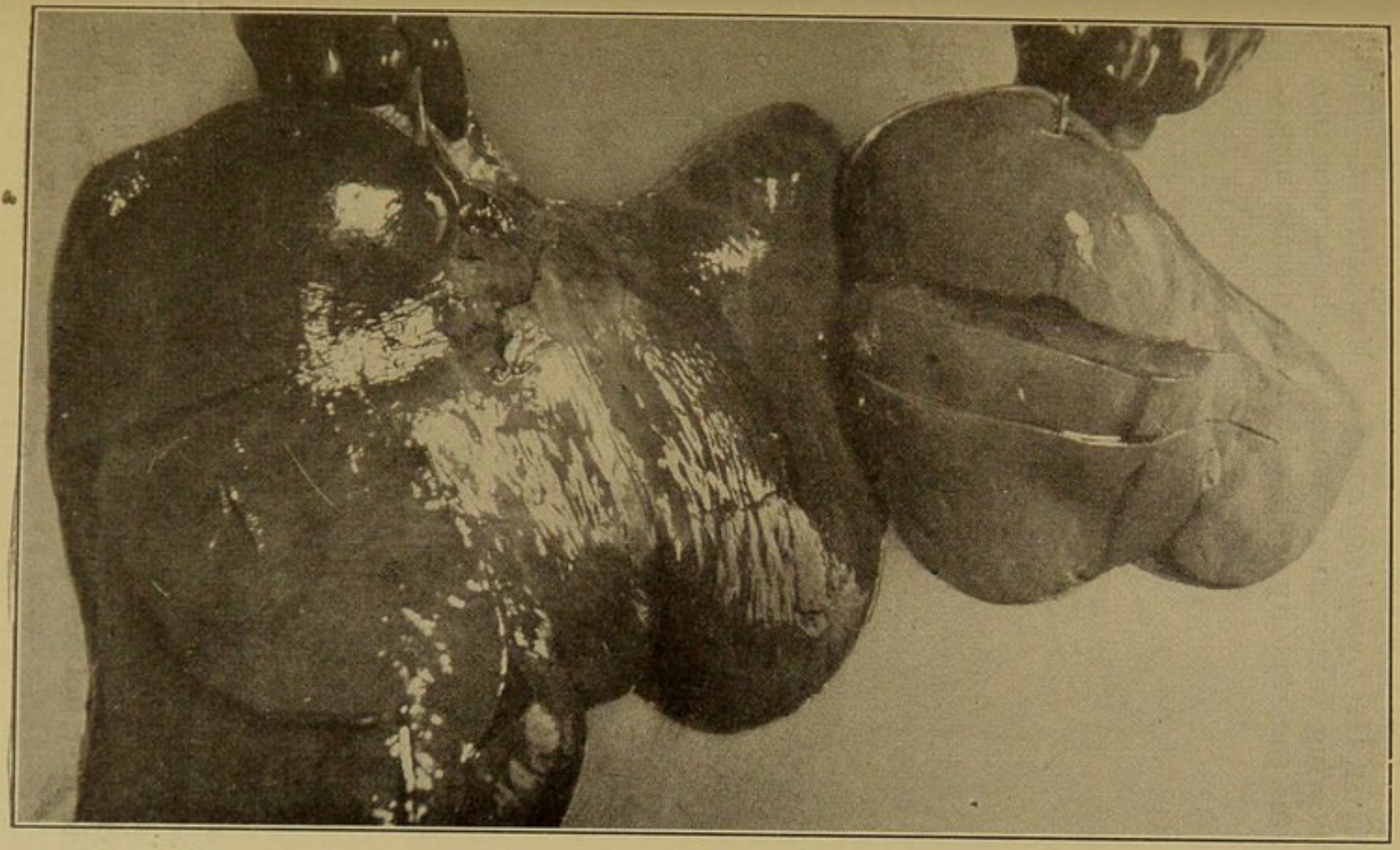

FIG. 2.—Case I.—Sarcomatous liver, weighing 6,500 grams. On the right a normal sized liver is shown for comparison.

Case II. *Lymphosarcoma of Mediastinum.*—The following fulminating case of lymphosarcoma illustrates the rapidity with which the disease may be-

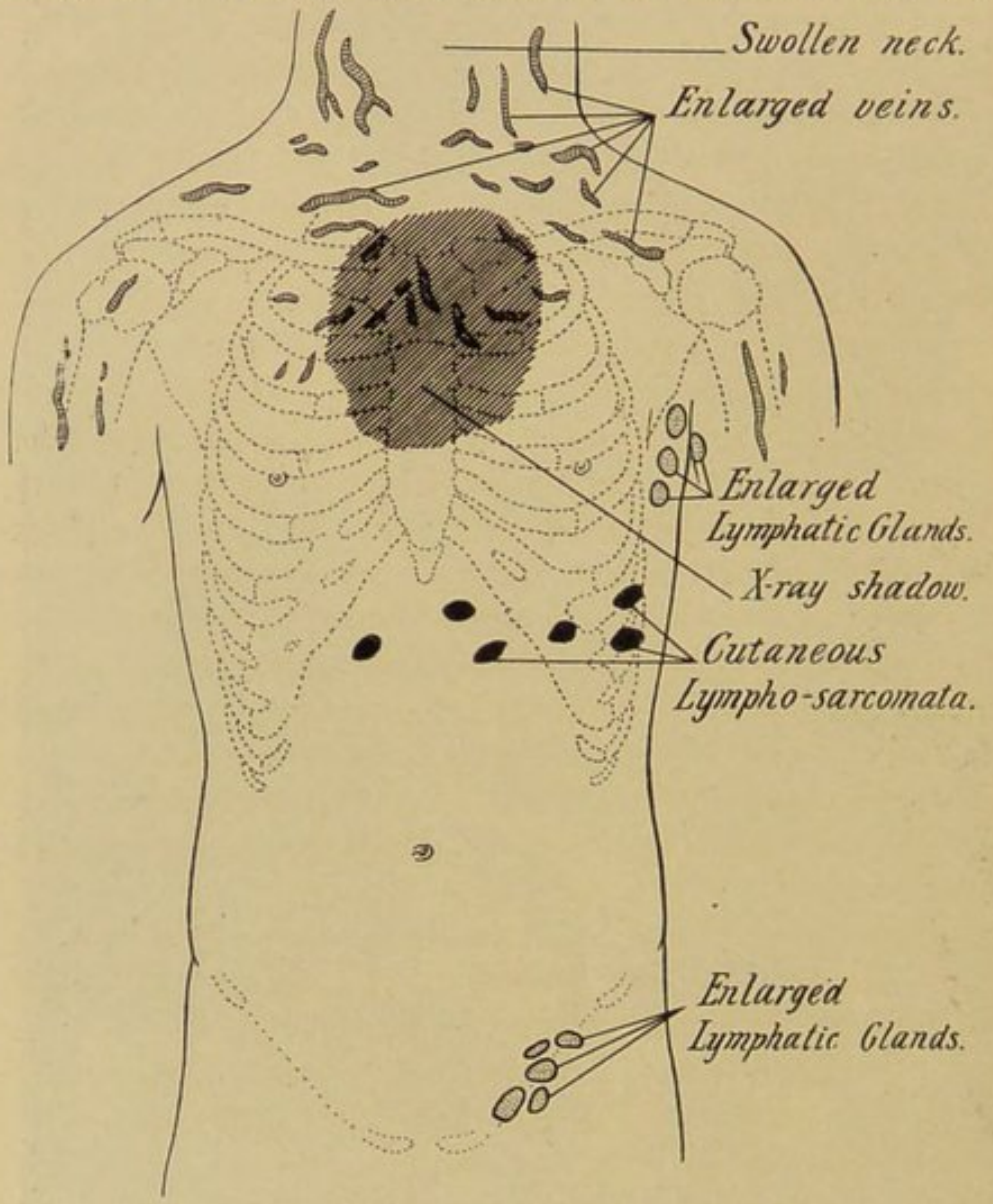

Fig. 3.—Case II.—Lymphosarcoma of mediastinum.

come fatal. The patient was a remarkably robust lad of 19 years, employed as a truck driver, who died within a month of the outset of symptoms and remained at work until a fortnight before death. He first noticed a diffuse uniform swelling of the

face and neck, and fullness in the head with dry cough and slight dysphagia. There were no other subjective symptoms of any kind until within an hour of sudden death. On admission to the Presbyterian Hospital the patient's neck was symmetrically swollen, evidently as a result of venous congestion. The superficial veins of the neck, upper sternal region, shoulders and upper arms were greatly swollen and tortuous on both sides. In the left axilla and groin were a few moderately enlarged lymphatic glands. Across the lower thorax anteriorly were a half dozen red elevated plaques, about an inch in diameter, resembling urticaria, and in fact the eruption was mistaken for urticaria by a dermatologist who first saw the lad. I noticed, however, that although the redness disappeared on pressure, the swellings seemed firmer than the usual urticaria wheels, and in connection with the swollen lymph glands and mediastinal pressure, I regarded the case as one of probable lymphosarcoma, and directed the house physician, Dr. C. T. Roome, to excise one of the cutaneous tumors for microscopic examination.

Meanwhile the *x*-ray (Fig. 4) showed a heavy shadow in the upper mediastinum, through which masses resembling enlarged glands could be differentiated. There were no pulmonary symptoms other than an area of dullness corresponding with the shadow, and a tracheal compression type of breathing. The cough was brassy, like the laryngeal cough of aneurysm. There was no fever, and the blood count was practically normal, as follows: Hemoglobin, 95 per cent.; erythrocytes, 5,268,000; leucocytes, 11,600; polynuclear cells, 66 per cent.; lymphocytes, 33 per cent.; mast cells, 1 per cent. It was easy to exclude

a diagnosis of aneurysm, abscess, tuberculosis, syphilis, and other types of mediastinal growth than the one suspected.

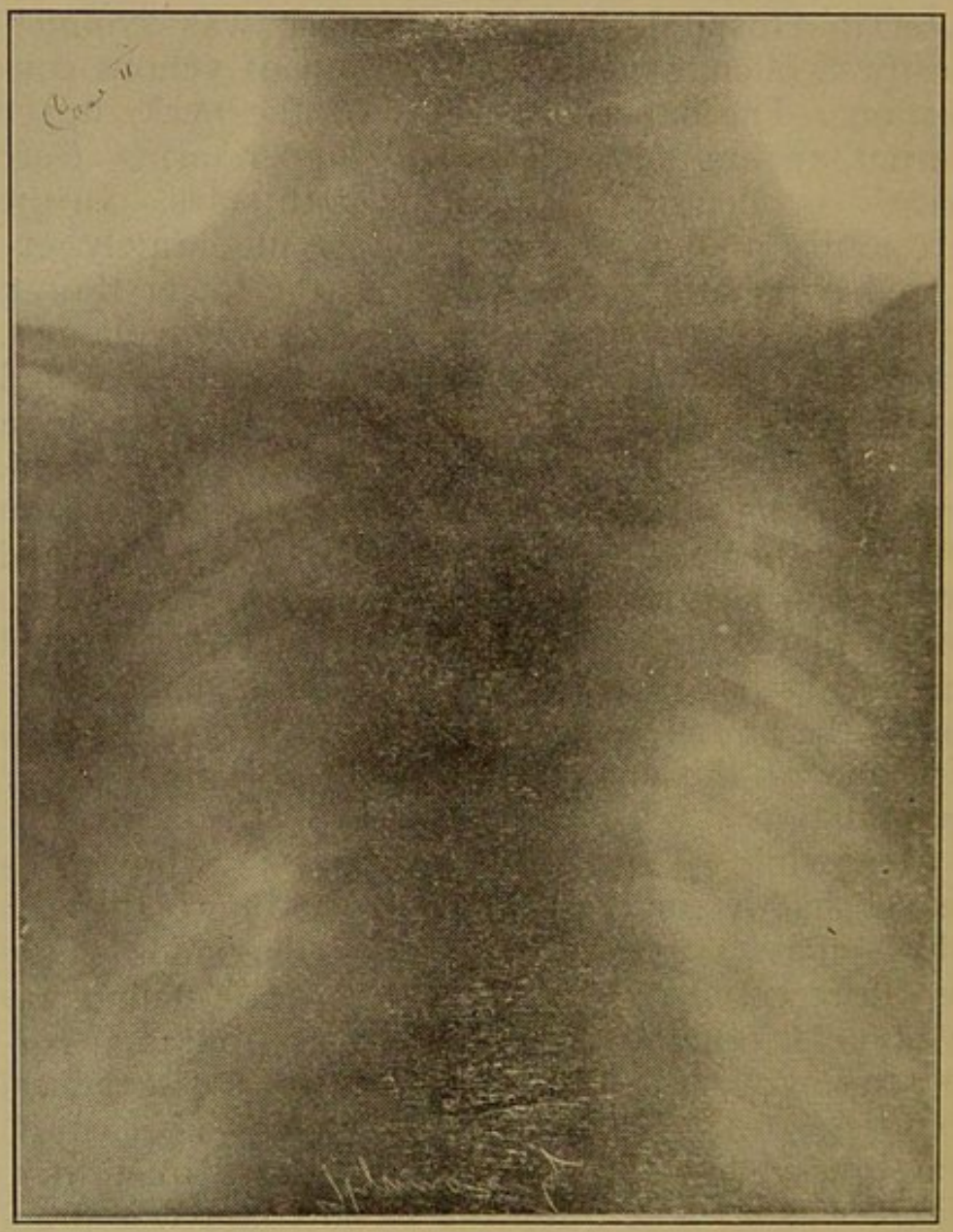

FIG. 4.—Case II.—Radiograph, showing thickening of neck, and extensive shadow in upper anterior mediastinum.

The pathological examination by Dr. Opie and Dr. Cecil of the excised tumor was as follows:

"The tumor measured 10 x 6 x 3 mm., was attached to the skin, and had a leathery consistence. The corium was greatly increased in thickness and infiltrated with cells of lymphoid type, occurring both in masses and scattered form. There were karyokinetic figures and irregular nuclei; the subcutaneous tissue was infiltrated with masses and strands of lymph cells, the largest being grouped about the sweat glands. In these areas were eosinophiles. Diagnosis: lymphosarcoma."

On showing the section of the skin tumor to Dr. Ewing, he expressed doubt as to the possibility of classifying it accurately, the specimen presenting some suggestion of an epithelioma or alveolar sarcoma.

The patient felt so well that he was permitted to sit in a chair, when he was suddenly seized with intense gasping dyspnea, cyanosis, and an imperceptible pulse. Thinking the dyspnea was in part due to laryngeal paralysis, Dr. Roome intubated the patient and gave vigorous heart stimulation, but the patient died from loss of breath within an hour. Unfortunately for a complete clinical picture, no autopsy could be obtained, so it was impossible to determine the number and size of the mediastinal glands involved, except as they may partially be determined by the radiograph. The manner of death resembled that from enlarged thymus in childhood, and the thymus has been found involved in similar cases. The case is unique from the rapidly fatal course and the restricted development of secondary foci outside of the mediastinum.

The literature of mediastinal sarcomata is necessarily meager. In Hare's classical monograph on mediastinal growths[2] he excluded cases of sarcoma reported prior to 1870, owing to the imperfect tech-

nique prevailing before that date, but collected 98 cases reported in the succeeding nineteen years.

Among a total of 520 cases of mediastinal growths, nine of the sarcomata occurred in the second decade of life. Eight years later Irving S. Haynes[3] collected 18 more cases for an article in the Loomis-Thompson System of Practical Medicine.[3]

Almost all the lymphosarcomata of the mediastinum are primary. They are of very rapid development, and usually involve the anterior mediastinum, originating in the thymus or tracheo-bronchial lymph nodes. Haynes suggests that the foreign material absorbed from the lungs or bronchi after inhalation and conveyed to the lymph nodes may prove an exciting cause by irritation. Sarcoma is the most frequent variety of histogenetic tumor occurring in the mediastinum, outnumbering the carcinomata three or four to one. The latter tumors, moreover, usually involve the posterior mediastinum, where there are more varieties of tissue from which they may develop, and they grow more slowly than the sarcomata, giving time for constitutional symptoms to arise. The case above reported corresponds in the site, rapidity of growth and absence of constitutional symptoms with these observations. Excepting the obvious swelling of the neck, the patient both looked and felt almost perfectly well until within the hour of his death.

Case III. *Melanosarcoma of Skin, Lungs, Heart, and other Organs.*—In contrast with the few secondary growths in the previous case, is that of a woman still under observation, who with sarcomata of the lung presents 185 tumors of the skin and superficial lymph nodes. Her history, in brief, is as follows: The patient is an Austrian, 40 years of age, formerly employed in a

clothing manufactory. She was in good health until within nine or ten months of her admission to the Presbyterian Hospital. For many years she had had a dozen small, black pigmented moles distributed over the dorsal surface of both feet and the lower part of the abdomen. One of these, on the left foot, became bruised and irritated by scratching, so she had it removed. Shortly afterward she noticed a bunch of about a dozen nodular tumors extending downward in the left femoral region. These were also excised. A few months later numerous subcutaneous nodules began to appear all over the body, which have gone on multiplying and increasing in size, most of the 185 having appeared within a period of two months. They vary in size from a diameter of half an inch to two inches. They are most prominent over the lower thorax, both groins, middle of the back and both arms, but there are few areas of the surface larger than half a dozen inches in diameter where some may not be found. The larger nodules cause considerable elevation of the surface of the skin, but the skin appears movable over them. A few are somewhat bluish in appearance, but none are deeply pigmented. From time to time there is local pain over groups of nodules, but it is neither constant nor very severe. The nodules are painful when first appearing, but the larger growths are neither painful nor tender.

During the past few months the patient has lost about thirty pounds in weight, and has complained of progressive weakness, fever, sweating, occasional vomiting, cough with bronchial expectoration (sometimes blood tinged) and occasional pain in the left chest, with a sensation of fullness there. She has also had chills at intervals. The examination of the urine, sputum and blood cultures are all negative.

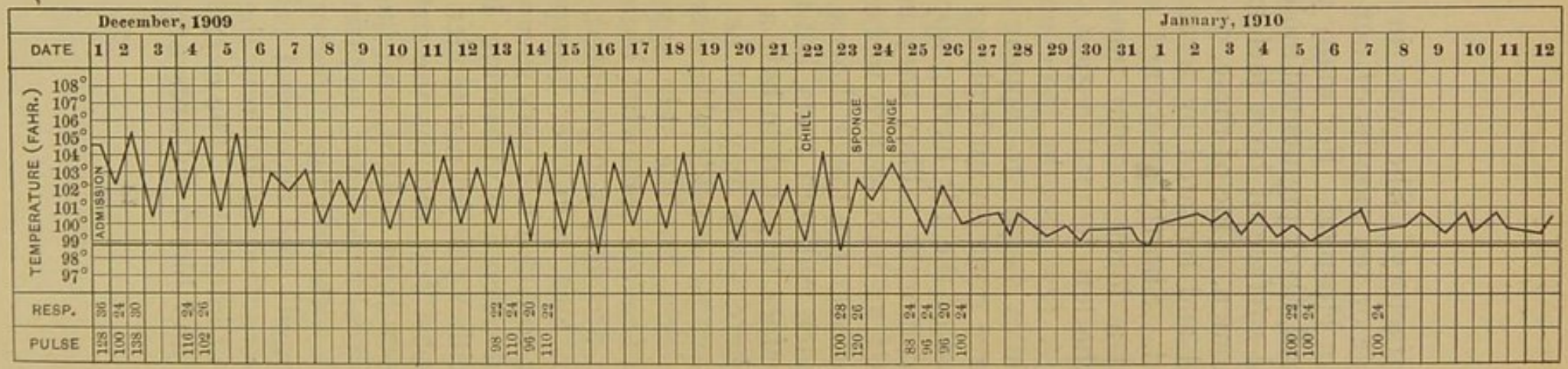

FIG. 5.—Case III.—Septic type of fever with universal sarcoma.

For a month after admission to the hospital the patient exhibited an abruptly septic type of fever, with daily fluctuations of about 4° Fahrenheit and a maximum rise to 105° Fahrenheit. (Fig. 5.)

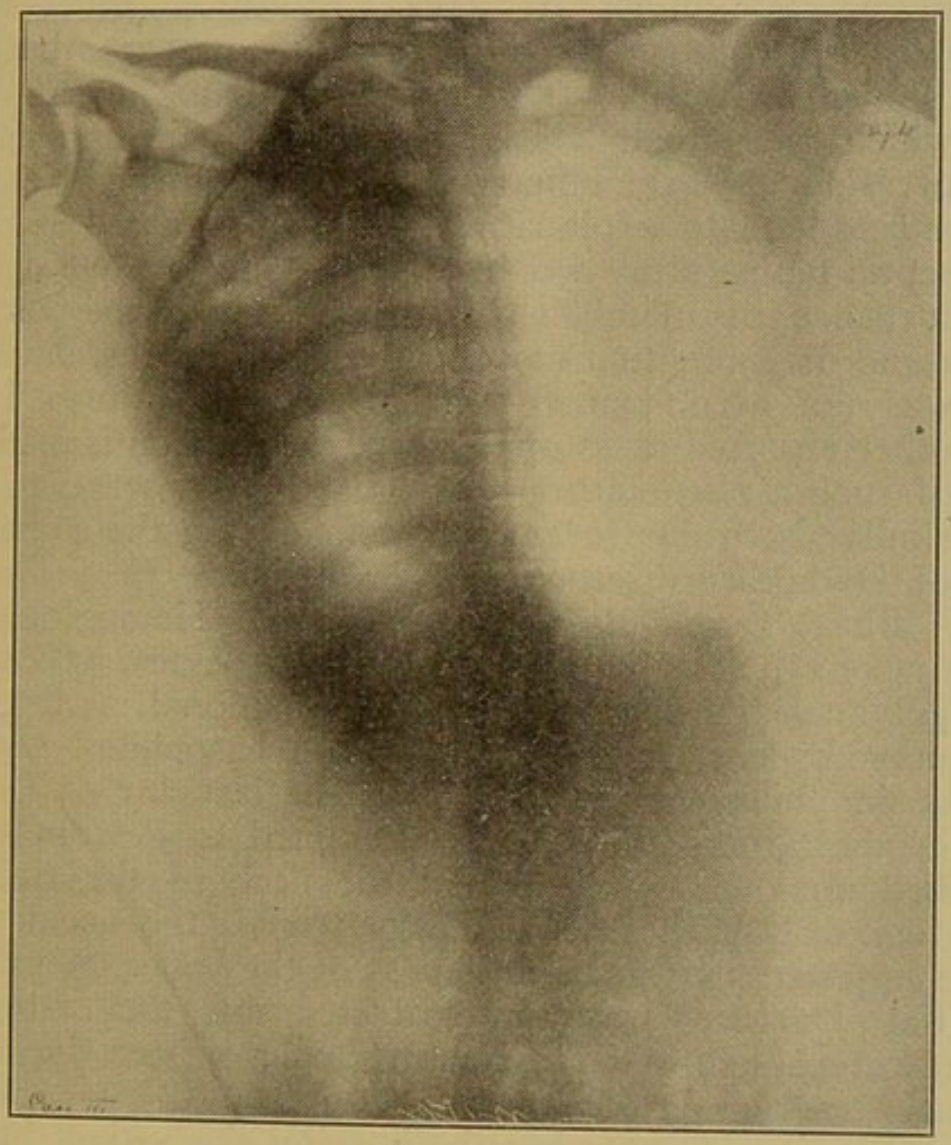

FIG. 6.—Case III.—Radiograph, showing combined atelectasis and consolidation with sarcoma nodules of entire left lung.

Explanation of this temperature was sought in the possible breaking down of one of the sarcomatous nodules, but none could be found, and the only

demonstrable visceral involvement is in the left lung, which appears solid from the base to above the angle of the scapula. A radiograph (Fig. 6) shows this portion of the lung to be absolutely air free, aspiration gives a negative result, and the physical signs are those of dense consolidation over this same area in which the patient has complained of pain and oppression. All the other viscera appear normal. The only adequate explanation of the prolonged high septic temperature would appear to lie in some disturbance of metabolism connected with the very rapid dissemination of so many new growths, but it was not accompanied by marked emaciation. In other reported cases of this type no mention is made of such a phenomenon, but it is well known that a similar irregular fever may occur during the course of Hodgkin's disease.

Blood examination is as follows: Hemoglobin, 67 per cent.; red cells, 4,840,000; leucocytes, 25,800; polynuclear cells, 82 per cent; transitional, 2; large mononuclear, 5; lymphocytes, 9; basophiles, 0.5; eosinophiles, 1; many plates. The last day of December, 1909, the patient attempted to get out of bed unaided and fractured the neck of the right femur. As the violence was trivial, the accident suggested abnormal brittleness of the bone. A partial fracture was demonstrated by the *x*-ray. (Autopsy showed the fracture to have been due to a metastasis in the bone.)

Previous to entering the hospital the patient had some sort of serum treatment, the nature of which could not be determined, but the result was negative. I asked Dr. William B. Coley to see the patient, and he was of the opinion that the case was of melanotic type, and not amenable to treatment by

his serum. I had a subcutaneous nodule removed by Dr. Roome, and Dr. Cecil, of the pathological department of the hospital, reported that it was a neoplasm composed of round cells closely packed and supported by a scanty stroma. Blood vessels were found in intimate contact with the tumor cells.

The face and the feet are the sites from which melanomata of the skin most often arise. J. A. Fordyce[4] reports two cases originating from the foot, although he believes that the pigmented congenital mole is not a necessary antecedent of melanomata, for some of the latter appear without such association, and pigmented moles are exceedingly common in comparison with the rarity of melanoma. The case above reported illustrates again the well-known fact that metastases of melanomata are more numerous than those of any other type of cutaneous malignant tumor, although they are not invariably present in the skin in cases of visceral melanotic sarcoma. Thus none were observed in the eye-liver case above reported (Case I), although the disease had lasted two or three years. The reason for the rapid spread of the metastases sometimes seen in melanoma appears to be dissemination through both blood and lymphatic channels. The original idea that the melanin is derived from blood pigment is controverted by the fact that iron is absent, whereas sulphur is present in the dark amorphous granules, and another explanation which has been offered is that some form of nuclein becomes altered into pigment. Not all the cutaneous tumors contain pigment, whereas some are filled with it. In the case above cited the general appearance of those tumors which are nearest the surface varies from white to a distinctly bluish color, and in the specimen excised for exam-

ination no pigment was observed. This variation accords with the usual finding in similar cases which have been reported.

The disastrous result which so closely followed upon the removal of a pigmented mole in this case emphasize again the well-known possible danger of this procedure, and is a strong argument in favor of treatment by radium, according to Dr. Abbe's method.*

CASE IV. *Sarcoma of Stomach, Heart, and Kidneys.*—This was the case of an Irish woman 47 years of age, who was in good health to within two months of her death, when she suddenly complained of abdominal, especially epigastric, pain, frequent nausea and vomiting, and weakness. Despite these symptoms she was able to perform house-work until within ten days of her death, although she lost about 25 lbs. in weight. There was no hematemesis or jaundice. The patient lived only four days after admission to the Presbyterian Hospital, during which time she had frequent vomiting, constipation, slight dyspnea and edema of the feet. The vomitus contained much mucus, with bile, pus cells, and red blood corpuscles. No

*Since writing the above description the patient died. Autopsy by Dr. Cecil showed an extraordinarily wide distribution of hard white sarcoma nodules, varying in size from a pea to several inches in diameter, which were of non-pigmented round-cell type. The spleen and liver curiously escaped, but nodules were present in their capsules, as well as in the pleura, bronchi, heart, pericardium, diaphragm, kidneys, suprarenals, thyroid, stomach, intestine peritoneum, abdominal lymph nodes, pancreas, ovaries, and bone marrow. The appendix was a mass of nodules, yet there were no symptoms of appendicitis. The destruction of the suprarenals gave rise to no bronzing of the skin. The nodules in the heart involved the septum auriculorum, and projected into the right auricle.

hydrochloric acid was found, either free or combined. The urine was of low specific gravity—1009—and contained red blood corpuscles, fat cells, and a trace of albumen, but no casts. There was decided secondary anemia, the hemoglobin measuring 64 per cent. The leucocyte count was 9000, with 68 per cent. polynuclear cells and 26.5 per cent. lymphocytes. Examination of the large, flabby abdominal wall showed no rigidity or tenderness, but both kidneys were very large and palpable, the right one being markedly prolapsed. Palpation over the epigastrium gave the impression of a deep-seated mass, and the diagnosis of gastric carcinoma seemed justified. The patient died from exhaustion, and the suspected carcinoma turned out to be a sarcoma of the stomach associated with extensive secondary growth in the heart, kidneys, pancreas, ileum, colon, and mesenteric glands. The following is abstracted from the report of the autopsy by Dr. Cecil. The tumor mass in the stomach was hard, white, homogeneous and glistening and composed of small closely packed lymphocytes in a delicate fibrous stroma. It largely replaced the mucosa, and, in part, had ulcerated through it. The few remaining glands of the mucosa were atrophic. There were a few minor tumor nodules. In the ileum and colon were small flat tumor masses, oval, which in some cases appeared to occupy the Peyer's patches as well as to replace the mucosa. There were also necrotic areas. Microscopically the intestinal tumors comprised the same closely packed lymphoid structure as the stomach tumor. The heart weighed 385 grams, the valves and pericardium were normal, but in both ventricular walls were seen many smooth, pinkish, oval tumor masses about 2 cm. in diameter, with-

out very distinct margins. Microscopically the tumors comprised the same type of lymphoid cells seen elsewhere, which were found to pack the intermuscular spaces and separate the muscle fibrillæ. The latter appeared intact despite the density of the new growth, which fact, in a measure, explains the remarkable absence of cardiac symptoms while the growth was in process of development. In certain other reported cases of sarcoma of the myocardium, a similar absence of symptoms has been commented upon.

The kidneys were very large, the right weighing 390 gm. and the left 430 gm. The capsules were nonadherent, and the normal kidney tissue appeared entirely replaced by nodules and irregular glistening white conglomerations of lymphoid cells. Many tubules and glomeruli were destroyed, others showed epithelial desquamation and distention with hyaline substance. The liver, spleen, and suprarenals were normal.

The infrequency of occurrence of sarcoma of the stomach may be gathered from a study made in 1905 by Corner and Fairbanks[5] of London, who collected 175 cases from the literature of primary sarcomata of the alimentary canal, of which 58 involved the stomach and 65 the small intestine. About one-third of these growths were of round-cell structure. Subsequently Norman Dalton[6] reported a round-cell sarcoma involving primarily the stomach and abdominal lymph nodes in a boy 15 years of age.

Harlow Brooks[7] reported in 1905 four cases of primary sarcoma of the stomach, one of which was of round-cell type, one a fibrosarcoma and one an angiosarcoma. His conclusion that sarcoma, while it is less apt than carcinoma to involve the gastric

mucosa, is also less liable to form metastases, does not appear valid in view of the findings of the other cases herein quoted.

Sarcoma of the Heart has been less often observed than carcinoma, when the total number of cases of each are compared, but although sarcomata in general are less common than carcinomata, the relative proportion of sarcomata in the heart is somewhat greater. All varieties have been found in the heart, and although all are rare, the melanotic, round cell and lymphosarcomata are most often encountered. Less often cases have been recorded of the spindle cell, fibro-, myxo-, and osteosarcoma types, together with various mixed and doubtful varieties. As a rule the growths are secondary, but about a score of primary tumors have been reported, although in many of the latter cases the autopsies have not appeared complete as to microscopic details of other organs.

Curt Boether,[8] in an inaugural dissertation for the doctorate in 1897, tabulates 31 published cases of sarcoma of the heart, mostly from German sources, including four of melanotic type. They involved collectively all parts of the heart, two affecting the tricuspid valve.

Boruch Blumensohn[9] of Russia, in an inaugural dissertation for the doctorate in 1907, refers to 10 published cases of primary sarcoma of the heart, and a somewhat longer list of secondary growths, to which he adds 12 cases from the Pathologico-anatomical Institute of Basel, four of which were melanosarcomata. In six cases the valves were involved.

Ludwig Hektoen[10] has figured a remarkable spindle-celled sarcoma of the right ventricle, secondary to a growth in the tibia, occurring in a lad of

12 years.[7] In the same article he reports a primary round-cell sarcoma of the epicardium, and another case of a melanosarcoma of the right ventricle secondary to a growth in the breast.

A. Jacobi reported a case of fibrosarcoma of the heart, and S. W. Gross, one of round-cell type.

Epstein[11] reported the case of a male, 22 years of age, who presented a sarcoma of the stomach with secondary nodules in the kidney and a degenerated sarcomatous mass lying between the right auricle and ventricle.

E. Bonardi[12] reported a case of sarcoma of the heart secondary to a melanosarcoma of the choroid.

B. Luzzato[13] was able to make a correct diagnosis of a sarcoma of the heart secondary to growths in the leg and lung, owing to the supervention of a mitral stenosis while the patient was under observation. The diagnosis, which has rarely, if ever, been made correctly, was confirmed by autopsy.

Charles Norris described a case of melanosarcoma of the heart in a boy of 16 years which accompanied similar growths in the skin, kidneys, and liver.

The late H. P. Loomis[14] reported a case of diffuse round-cell sarcomatous infiltration of the heart and kidneys, secondary to a sarcoma of the breast, which was not unlike the personal case I have above detailed. (Case IV.)

Peter Neu[15] reported a lymphosarcoma of the left ventricle, "as large as an apple," apparently secondary to the removal of a tonsillar growth, and complicated by cerebral embolism.

Alexander Lambert[16] has described the case of a man 39 years of age, in which a small round-cell sarcoma involved the lung, pleura, pericardium, and

left ventricle, which was remarkable from the fact that the patient was able to work shovelling snow until within a month of his death from dyspnea. The rapidity of development of this growth is analogous to that in Case II, above described.

John S. Thacher's[17] case was one of small round-cell type involving the stomach, with a secondary growth in the left auricle.

E. Libman[18] described a lymphosarcoma of the small intestine, the only one among 60 recorded cases in which there were metastases in the heart muscle.

Karl Bodenheimer[19] (Inaugural Dissertation) reported a case of primary sarcoma of the heart from the Bern Klinik.

Byron Bramwell[20] pictures a large double sarcomatous growth of the heart, one mass lying upon the exterior of the right ventrical, beneath the pericardium, the other situated within it, below the tricuspid valve.

The sarcomatous nodules may be situated within the myocardium, as in case IV herein reported, or lie upon it as in Case III, or beneath the endocardium, but are less liable than carcinomata to involve the pericardium unless by extension from mediastinal growths. The pericardium may, however, become affected separately, and Kaak has reported (1904) a myxocystosarcoma occupying this site. The usual pericardial growth takes the form of a diffuse infiltration.

A striking feature of all the reported sarcomata of the heart is the infrequency of associated embolism and cardiac rupture.

To this list I add the two cases above reported (Cases III and IV).

Case V. *Small Round-Cell Sarcoma of Stomach.*

—The following case of lymphosarcoma of the stomach was operated upon by the late Andrew J. McCosh at the Presbyterian Hospital, and has not previously been reported:

The patient was a housewife, 39 years of age, who for a year had complained of gastric symptoms, mainly pain and vomiting, accompanied by loss of weight. Melena was present, and free hydrochloric acid was absent from the stomach contents. A mass of considerable size could be palpated in the epigastrium. A gastrectomy was performed, when the mass, which was the size of an egg, was found to occupy the pyloric end of the stomach, extending into the greater curvature. No secondary nodules were discoverable.

The tumor mass removed from the stomach measured 6 x 4 cm. It was hard and glistening, and composed of small round cells, larger than lymphocytes, imbedded in a small amount of stroma. The mass destroyed the submucous coat, and remains of the muscular coat were distributed through it. There was much lymphoid tissue also in the muscular coat, and the neighboring mucous membrane presented many ecchymoses.

Virchow[21] in his classical work, "Die krankhaften Geschwülste," stated the general proposition that "almost all those organs which show a great predilection for malignant tumor formation have little tendency to beget metastases, and conversely," yet the visceral sarcomata present so much variation in metastasis that it would seem unwise, with our present knowledge, to apply any such general rule to them.

Most of the 43 sarcomata received into the Second Division service of Bellevue Hospital during the past five years were sent in for operation,

and the tumors of this group showed the usual predilection for the jaw, pelvic bones, and thigh. There were also seven cases involving lymph nodes in the neck, but in none of these latter, although the growths were multiple, was there any tendency to visceral or cutaneous metastases. One visceral case involved the kidney and one the occipital lobe of the brain, without metastases. The occipital tumor was as large as an orange, and caused blindness, deafness, headache, vomiting, convulsions, and noisy delirium. There was one case of lymphosarcoma of the intestine in a patient 53 years of age, but there was no involvement of the other viscera or skin. In two cases the tumor was situated in the right orbit, without extension to the liver or other organs. There were two cases of melanosarcoma of the skin with multiple growths which were very numerous. They were also without metastases, apart from the skin, at the time at which they were under observation. One of these cases involved the trunk and lower extremities, the other the trunk and upper extremities. The latter case was that of a man 50 years of age, who had cauterized a pigmented mole. Six months later a nodule appeared beside the umbilicus and was excised, when five months later the tumors became generalized throughout the skin. This series of cases emphasizes the comparative infrequency of visceral metastases, even when the local growths had attained to considerable size, whereas in the four cases of my personal series, the visceral extension was the most serious part of the disease. As they belong to different species of sarcomata it is interesting to observe the extent of the involvement. That there did not happen to be any visceral metastases in the Bellevue series is doubtless due to the fact that the patients in many

instances came in for early operation, before the disease had spread.

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