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ABSTRACT OF DR. ANDREW CLARK'S
CASE OF FIBROID PHTHISIS.

Prepared for discussion at Clinical Society

General Summary.—A woman, æt. twenty-eight, four years married, childless, sprung from healthy parents, said to have been temperate, and to have enjoyed good health till three years before, when she had ascites, from which she recovered in eleven months, began, in July, 1867, to suffer from vomiting, prostration, cough, occasional hæmoptysis, muco-purulent expectoration, containing lung tissue, œdema of extremities, and intermitting diarrhœa, and becoming rapidly worse, died comatose on the 5th December of same year. Post-mortem examination revealed, as had been predicted during life, fibroid disease of left lung, with dilated bronchi, cheesy deposits, and cavities arising from their disintegration; enlargement (and waxy degeneration) of liver; granular contraction (and some waxy change) of kidneys; ulceration of the bowels; enlargement of mesenteric glands; and fibroid degeneration of, or deposit in, other organs and tissues.

State on Admission.—Patient greatly emaciated,

reclines on her back, and takes little notice. Pupils dilated and sluggish. Is drowsy, but sleepless. Answers questions with difficulty, but as it seems correctly.

Teg. Org.—Skin dusky, yellowish, dry, rough; white patches here and there. Hair dark, scanty, coarse. Fingers clubbed. Temp. in axilla 97.4.

Dig. Org.—Teeth decayed, yellow: sordes. Tongue dry, red, and cracked; thirst; vomiting; flatulence; diarrhoea, preceded by griping pains. Hepatic dulness, greatly increased downwards and to left. No increase of splenic dulness.

Genito-urin. Org.—Menstruated two months ago. Slight leucorrhœa. Urine deficient in quantity, pale, acid, of a density of 1012, and containing a tenth of its bulk of albumen. Scanty deposit, exhibiting granular matter and small hyaline casts.

Resp. Org.—On account of weakness of patient, front and lateral parts of chest alone examined. Respirations 20 per minute, and chiefly abdominal.

Examin. of Left Side.—Front depressed, and movement slight. Supra-clavicular region percussion tympanitic; breath sounds blowing; resonance broncophonic, with echo. From second to fifth rib, and from near sternum to posterior part of axillary region, hard resistant dulness, with considerable retraction of chest-wall. In front of this region, inspiration bronchial, and accompanied by moist subcrepitant râles; expiration dry, and not sensibly prolonged. In axillary region breath sounds tubular, and partly masked by coarse crepitation; vocal resonance broncophonic. At two spots breathing cavernous and voice pectoriloquous; here metallic

click is heard coincident with heart's contractions. Along posterior axillary line an occasional creaking-leather sound is heard, and vocal fremitus and vocal resonance are notably diminished. Over lower part of lung, inspiratory murmur harsh; and expiratory murmur, which in its first half is blowing, terminates only after apparent cessation of movements of thoracic walls by a few gentle puffs. A fine dry crepitation is developed by forced inspiration. Ultimately in this region there were uniform dulness, tubular breathing, and broncophony.

Examin. of Right Lung.—Percussion over anterior third tympanitic; elsewhere normal. Inspiratory murmur harsh and divided; expiratory prolonged, blowing, and accompanied by sibilant ronchi; vocal resonance increased.

No distress of breathing. Cough infrequent, but paroxysmal, and ending in vomiting. Expectoration occurs at close of paroxysms. Sputum mucopurulent, streaked with pigment, and not lumpy. Bands and areolæ of elastic tissue present.

Circ. Org.—Apex beat at upper border of fourth rib, just outside nipple. Visible pulsatile movement (nearly synchronous, with ventricular contraction) in second intercostal space an inch and a half from left border of sternum. Low pitched systolic murmur at cartilage of second left rib; can be followed a little way upwards and outwards, but not downwards, or to right side; it is increased by deep inspiration, and modified by position. Pulse 74, small.

Nervous System.—Attention introverted. Drowsy, but sleepless. Answers when roused. Sight and

hearing defective. No headache. Occasional sensations of numbness in the limbs, and tremblings. Slight œdema of feet.

Diagnosis at bedside, as in summary.

Progress of Case.—Patient varied little. Sometimes obstinate vomiting; sometimes constipation, alternating with diarrhœa. No evening fever. Pulse never rose above 92, respiration above 26, temperature above 99; till near the close of life the figures were considerably lower. Upon great restlessness followed increasing weakness; then coma; and on the 3rd December, death.

Summary of Post-mortem Examination.—Heart small, and displaced upwards; no valvular disease; origin of vessels compressed by solidified lung, with pericardium adherent to it. Right lung, with the exception of some vesicular emphysema and some thickening and congestion of the bronchial mucous membrane, absolutely free from disease. Left lung universally adherent, diminished in bulk, and about its middle third, dense and fibrous. When cut open, the summit was seen to be free from disease. The inferior part was traversed by fibrous septa, some of which, pursuing a horizontal direction, occupied the place of the bronchi and blood-vessels—some, intersecting, occupied the place of the interlobular areolar tissue. Imprisoned portions of lung contained cheesy deposits, at parts broken up into cavities. Several bronchial tubes were dilated, and terminated in ulcerous dilatations. No grey granulation any-

where to be found. Bronchial glands enlarged and cheesy. Liver very large and waxy. Capsule of spleen much thickened. Kidneys granular, and capsule adherent. All these organs at scattered spots became reddish-brown on the application of iodine; *so also did some minute portions of the fibroid deposit in lung.* Numerous deposits in and ulcerations of ileum. Mesenteric glands enlarged.

Extracts from Report of Microscopic Examination.
—Lungs: The horizontal septa consisted almost exclusively of obliterated blood-vessels, or bronchi thickened by adventitious fibroid tissue. The intersecting fibrous bands occupying the interlobular fissures, and ramifying in varying directions from them, consisted of a true areolar tissue. In the dense slate-coloured portions of lung the alveoli were filled by what seemed an amorphous substance, having occasionally an appearance of fibrillation. At some parts this substance, under the action of weak acid or alkaline solutions, exhibited the presence of a few epithelial-like cells; at others, no manipulation and no reagent revealed the presence of any structural element. It seemed as if three morbid processes had been at work,—the spread of a true areolar tissue from the pleura, interlobular fissures, bronchi, and blood-vessels; the production of a fluid which pervaded the textures, and clotted into amorphous moulds of the alveoli; and a simple fibroid degeneration of normal textures.

The smaller cheesy masses occupying the centres of the lobules were composed chiefly of flattened epithelial-like cells, with particles like the white

blood corpuscles, a few blood discs, and some granular matter. The larger cheesy masses were differently constituted. In each the central parts were composed of a granular detritus; outside lay free nuclei and granular matter; still more externally were disintegrating cells; and on the circumference were swollen and distorted cells, with multiple nuclei and vacuoles. To the naked eye the masses had the aspect of what is called cheesy tubercular infiltration; but the microscope showed that they had the structural characters of what the author has described as *epithelial pneumonia*.—LECTURES AT COLLEGE OF PHYSICIANS, 1866.

* * * * *

Remarks.—It is no longer matter of doubt that the term phthisis, as commonly employed, comprehends several states of lung, distinct in their origin, nature, progress, and issues. To set forth in a clear manner the assemblage of symptoms by which they are respectively to be distinguished during life is the greatest desideratum in the pathology of lung affections. Without such knowledge, the results of clinical inquiry are vitiated, and the conclusions drawn from therapeutical experiments rendered worse than worthless. * * *

The term Fibroid Phthisis is applied to those cases in which the leading anatomical facts are the absence of tubercles in the lung, and its invasion and contraction by fibrous tissue, or a fibrogenous substance involving bronchial dilatations, cheesy deposits, and small cavities commonly confined to the lower two-thirds of the organ. * * *

The diagnosis in this case was not difficult. Tubercle was excluded by the absence of disease in right lung, by the assumption that the apex of left lung was free, and by the negative character of the general symptoms. There was no great hurry of the circulation, no distressing dyspnœa, or breathlessness, no evening fever, no continued elevation of temperature (Ringer), and no profuse perspirations. In the presence of positive signs of another constitutional affection, the occurrence of diarrhœa cast no serious doubt upon the propriety of the exclusion. Diarrhœa, dependent or not upon ulceration of the bowels, may arise in almost any form of chronic disease to which the lung is liable. Cirrhosis and chronic pleurisy were excluded by the evidences of pulmonary cavities derived from the physical signs, and from the microscopic examination of the sputum. Was it cancer? The patient's aspect, the rapid progress of the disease, its unilateral character, the retraction of the chest-wall, the continuity and extent of the dulness, and the frequent hæmoptyses, all disposed one to the adoption of this conclusion. But then the very considerable contraction of the chest-wall, the moist râles, the characters of the sputum, the justifiable conviction of the presence of several scattered cavities, the absence of any evidences of outgrowth, enlarged glands, or tumours in other parts, and, above all, the presence of many concurrent evidences of constitutional fibroid degeneration, eliminated the idea of cancer, and led to the only conclusion tenable, that the case was one of *Fibroid Phthisis*.

The evident existence of fibroid degeneration in

various organs and tissues led to the conclusion that the lung disease was essentially constitutional ; and the fact of the disease being unilateral was held, in the light of the history of primitive pulmonary cancer, to be no bar to this conclusion.

The existence of cheesy deposits was inferred, first, from the physical signs—a coarse, rather dry crepitation, followed by dulness, tubular breathing, and broncophony ; secondly, from past pathological experience of such cases ; and, thirdly, from the existence of ulcerations in the bowels. Cheesy matter—that is, almost any pathological product in the way of structural and chemical degradation—appears from the author's experiments, often repeated, to be in some manner an efficient cause of secondary deposits in various textures and organs, and of secondary deposits and ulcerations in the bowels.

The systolic basic bruit was inferred to be dynamic, and to be owing partly to pressure, and partly to the altered axial relation of the heart and great vessels, by reason of its variability and the readiness with which it was influenced by changes of position, by forced inspiration, and by coughing.

The case concludes with a summary of the more important circumstances tending to elucidate the nature and facilitate the diagnosis of Fibroid Phthisis.

1. Fibroid Phthisis may have a constitutional or a local origin. (C. J. B. Williams ; Handfield Jones.)

2. When the disease has a constitutional origin, the fact will be indicated by the presence of signs of fibroid disease in other organs and tissues ; by

white skin spots (H. G. Sutton); by corneal degenerations (Canton); by anæmic urine containing granular matter, granular casts, or albumen; by evidences of cirrhotic or amyloid liver, of enlargement and hardening of spleen, and of induration of the nervous centres.

3. The constitutional state of which these growths, deposits, or degenerations are the manifestations seems to be closely connected with, if not dependent upon, the abuse of alcohol (Huss), syphilis (Wilks), rheumatism and gout (Author), exhausting discharges (Dickinson), and defective excretion (Author).

4. The actual product of this state appears either as a true fibroid tissue or as a tough, hard amorphous fibrogenous substance (Williams; Walshe). The latter is closely akin to the "amyloid material," and even in the lung is sometimes reddened by iodine. It does not appear to be the product of cell proliferation, but to be the result of a real exudation in the ordinary sense of that term. The former can always be traced into continuity with perilobular, peribronchial, perivascular, or subpleural areolar tissue. The latter occupies the alveoli, and is often found in isolated patches. Structural elements, such as are seen in adjacent parts, are often found in it. When nuclei are present in it, they are the ordinary circular nuclei of the alveolar walls, and not the spindle-shaped or oat-like nuclei of connective tissue. In other organs, the fibrogenous material sometimes contains oat-shaped nuclei derived from proliferation of the vascular walls. To this source also are to be referred many of the nuclear fibres

and spindle-shaped cells supposed to be illustrations of the cellular development of fibrous tissue.

5. When the disease is not of constitutional origin, there will be found evidence either of the pursuit of some occupation exposing the patient to the inhalation of irritating particles (Peacock ; Greenhow), of the existence of tubercular phthisis, long-continued bronchitis, or of some former attack of acute disease, such as fibrinous pleurisy, pericarditis, or what the author has called the corpuscular form of pneumonia.

6. The disease commonly affects one lung, and more commonly the left than the right.

7. If the disease affects both lungs, it is, as a rule, either the effect of mechanical irritation, or it is accompanied and has probably been caused by the presence of tubercles.

In rare cases, the double affection may be caused by rheumatism or syphilis (Wilks).

8. In Fibroid Phthisis there is always contraction of the chest-wall. The percussion dulness is harder, higher-pitched, and more uniformly continuous than in any other lung disease. Resistance of thoracic parietes is greatly increased. Intercostal spaces are depressed. Sometimes the dulness is tubular. Vocal fremitus is at one time increased, at another greatly diminished. Over the fibroid lung one hears blowing breath sounds often without audible prolongation of expiration ; occasionally coarse dry and moist râles, superficial creaking, and diffuse broncophony. Over cheesy deposits of any extent the breath sounds are sharply tubular, the expira-

tion prolonged, and the vocal resonance bronchophonic, sniffling, and circumscribed.

9. If the apex of the diseased lung is involved in the solidification, there is reason to suspect the existence of tubercles; if there is moist crackling in the supraspeneous fossa, the suspicion amounts to probability; and if with the slightest dulness over the summit of the opposite lung there is any moist crepitation, doubt is practically no longer possible.

10. When the lung below the solidification is healthy, expiration is peculiarly prolonged and puffy.

11. When cavities exist, they commonly occupy the mammary region: occasionally they are found in the base, and with extreme rarity in the summit of the lung. (Sutton's cases appear to have been complicated with tubercles.)

12. When about the middle of the lung several cavities lie near together in a horizontal or diagonal line, and are bounded by solidified lung, they are in all probability due to dilated bronchi. Cavities resulting from the breaking up of cheesy deposits are commonly isolated, irregularly placed, larger, and yield on auscultation unmistakable cavernous or amphoric breathing and pectoriloquy. The only certain evidence, however, of the existence of cheesy cavities is the presence of areolæ of elastic tissue in the sputum.

13. In the neighbourhood of the solidified lung it is not uncommon to find patches and tracts of lung in a condition of extreme vesicular emphysema; *and the atrophic changes constituting it appear in many instances to be due to plugging, or some other*

obliteration of branches of the pulmonary artery. It is therefore a statical as opposed to a dynamical emphysema.

14. When the left lung is affected, the heart is usually displaced upwards, and a little outwards. When the right lung is affected, the heart is drawn chiefly outwards, and a little upwards. In both cases, a low-pitched systolic bruit is commonly heard over the pulmonary artery.

15. The cough is paroxysmal, and ordinarily induces vomiting. The expectoration varies: it is usually yellowish, greenish, or ashen grey, studded with pigment streaked with blood; sometimes foetid, and ejected with difficulty after several ineffectual fits of exhaustive coughing.

16. The general symptoms, viewed collectively, are strikingly different from those of tubercular phthisis. The skin is, local sweats excepted, dry and inactive; there is no continuous elevation of temperature, no evening fever, seldom any hectic flushing. Till the disease is far advanced, the breathing is quiet, and the pulse below 84.

17. Slight œdema of the lower extremities is very common in the course of this disease, and almost always present at its close.

18. Patients who have long suffered from Fibroid Phthisis, whether of local or constitutional origin, become at last pallid, waxy-looking, and cachectic.

19. The disease is commonly slow in its progress, and when it complicates tubercles it retards disintegration and greatly prolongs life. This may explain some of the cases of unusually prolonged phthisis in spirit drinkers.

20. The frequent occurrence of even copious hæmoptysis, and the setting in of diarrhœa in the course of this disease, may justify a suspicion of the development of tubercles, but are not conclusive evidences of their presence. Hæmoptysis, diarrhœa, and ulceration of the bowels often occur during life without a solitary tubercle being found after death.

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