

can vary the size and general well-being of a race through the parental blood, and in the same way we shall see that poisons or micro-organisms introduced into the blood may cause qualitative changes in the germ cells which will appear in the individuals which develop from them as disease or as predisposition to disease. This is a position which would, I believe, find acceptance with every biologist, and we shall now have to see how these views apply in the social life we see around us. The time is passed when we need to apologise for applying the statements generalised chiefly from the animal world to man and his conditions of life. Such an application has, of course, to be made with caution, and at most we must look upon these generalisations as giving us a clue to what may be. There is no reason, however, to believe that general truths of heredity applicable to the whole animal and vegetable world should not apply to the one *genus homo*, and if we can find that these do apply it will be to the biologist that we shall owe our thanks for having in the first case indicated them to us. Only since Darwin's time has mankind obtained anything like an approximate idea of the way in which racial change is brought about, for if men dreamed in former times of the elimination of disease and evil dispositions and incapacity, with a view to the betterment of humanity, they had not the slightest idea as to how that change might surely be brought about. They thought that by the transmitted effects of good hygienic conditions, education, and kindly treatment this could be effected, and in that belief, as we have already partly seen, they were profoundly mistaken. The pages of history are full of the stories of vast empires which, starting full of hope and vigour, have crumbled away in time and are no more. We read of these and, maybe, often wonder at the apparent waste—whole races swept away amidst a million hardships, with a bare record of a page or two. We often wonder, too, whether this must be so with us, whether, as with a man, a nation has its allotted time to live. From the biological standpoint we may emphatically affirm that this is not so and that a race may be preserved and developed without catastrophe, without the terrible suffering which we have learnt to regard as inevitable—that we are as everlasting as life itself.

A Clinical Lecture

ON

A CASE OF TUMOUR OF THE LUNG.

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GENTLEMEN,—The case which I am going to relate to you was a peculiarly instructive one and presented features of great clinical interest. It was that of a man aged forty-nine years who was admitted to the Manchester Royal Infirmary on Oct. 27th, 1893, for pains in several of his joints of about a fortnight's duration. He made no other complaint than of these pains and he did not appear on admission to be seriously ill. There was only very slight febrile disturbance and this ceased on the administration of salicylate of soda, the joint pains being relieved at the same time. On the routine examination of his chest being made, however, a remarkable state of things was discovered. The whole left side of the chest was dull on percussion and the apex-beat of the heart was slightly displaced to the left, being situated just outside the nipple line. The heart sounds were normal. The vocal fremitus was diminished—annulled, in fact—over the left side. On auscultation there was pure, though by no means loud, bronchial breath sound to be heard over the upper lobe of the left lung, while below breath sound was absent. At no place were any bubbling sounds audible. The patient had a slight cough and expectorated a little mucus. On careful inquiry we found that he had expectorated a little blood mixed with phlegm five or six months before admission to hospital—he thought about two teaspoonfuls. It was noticed that he had several “strumous” looking scars on the neck, and he told us that the sores which had given them origin had occurred only within the last few years. He had never had rheumatism before the present

illness. The joint pains were much relieved by salicylate of soda and soon ceased, and the general condition of the patient improved, so that for a time he seemed to be convalescent. Joint pains, although of no great severity, continued, however, to recur from time to time, while the physical condition of the chest remained unchanged. The chest was almost daily examined, but on no occasion were moist sounds audible. Owing to the physical signs in the chest the patient was retained in hospital, and at the end of November he was abruptly seized with severe febrile symptoms, which were attributed to an attack of influenza, which was prevailing at the time. No additional physical signs were discovered. The general aching and headache were severe. However, a few days later pericarditic friction sound became audible over the heart, chiefly at the apex. Next day it had disappeared, but the patient was much worse and, indeed, was evidently dying; the fever was high and bronchial effusion was taking place in the right lung, which was oedematous. He died on Dec. 3rd. Before giving you the result of the post-mortem examination of the patient I will try to bring before you in a summary as clearly as possible the broad features of the case as they were presented to us at the bedside. We had (1) the joint pains; (2) the physical signs elicited on examination of the left side of the chest; (3) the “strumous” scars on the neck; and (4) the history of hæmoptysis. I have enumerated these features in the order in which they were revealed to us.

1. *Joint pains*—These were the only symptoms when the patient was admitted. It was for them that he sought admission. The physical condition of the chest was discovered by routine examination, but it was the discovery of this physical condition which led to inquiries being made, revealing the history of hæmoptysis, and which led to much importance being attached to the scars on the neck. It does not require much experience of clinical medicine to teach us to avoid the popular error of putting down as “rheumatism” any joint pains of which a patient may complain. In this case, while it was difficult to define their true nature, a strong suspicion at least of their not being truly rheumatic was aroused by the age of the patient (forty-nine), an age at which true rheumatism is seldom for the first time developed. Gout seemed to be out of the question, owing to the distribution of the affected joints. There was no affection of the ball of the big toe. Moreover, there were no “tophi” on the ear or elsewhere. The joints were neither red nor obviously swollen. Rheumatoid arthritis or osteo-arthritis, again, did not seem to be the cause of the pains; the joints were not at all deformed. Gonorrhœal rheumatism also was practically out of consideration from the circumstances of the case, and the localisation did not at all suggest it. Lastly, there was pyæmia, but the patient did not seem to be at all gravely ill when he was admitted, and there was no apparent source of pyæmia; the fever was very slight, and till the final attack of illness there was no rigor such as is indicative of a rapid and considerable rise of temperature. The relief of pain by salicylate of soda must not be given too much importance as indicating the rheumatic nature of joint pains, although the result of its administration often helps in the discrimination between rheumatoid arthritis and true rheumatism, the latter being usually relieved by it, the former not at all. Here is a case in illustration of the risk of basing an opinion as to the nature of a joint affection upon the fact that pain is relieved—even satisfactorily and quickly—by salicylate of soda. A patient under my care who had had rheumatic fever more than once was under treatment for dropsy and the ordinary symptoms of heart disease. While recovering from these he had pains and swelling in his joints, which, considering his past history, I attributed to rheumatism, and for which I ordered salicylate of soda. The pain was relieved at once, and I was confirmed in my error of regarding the joint affection as rheumatic. However, the tenderness of the congested liver did not subside with the other symptoms of circulatory disturbance. Moreover, the patient was much more jaundiced than simple heart cases with congested liver usually are, and the jaundice persisted. The patient fell into a “typhoid” condition and died without there being any return of the dropsy. Post mortem we found the right sterno-clavicular joint full of pus, and the gall-bladder also the seat of suppuration, set up by the presence of gall-stones. Had the salicylate not speedily relieved the joint pains I probably should have had my suspicions aroused and possibly might have discovered that the tenderness over the liver was peculiarly localised; in short, that it was due to something more than the venous stasis of heart disease. The

case, of course, was one of pyæmia, the source being apparently the suppurative of the gall-bladder, which was in its turn set up by gall-stones. We cannot, then, use salicylate of soda safely as a "test solution" for rheumatism, although it is often useful in this way. It seems probable that rheumatism is due to a micro-organism, and pyæmia is certainly so, and we can understand that a remedy useful in the former may at least relieve the pain and lower the temperature in the latter disease. To return to the case which is the subject of this lecture. I was in doubt about the joint affection being truly rheumatic because, as I have said, the patient was forty-nine years of age and this was his first attack. The liability to heart disease among the subjects of acute rheumatism varies greatly with age, young people very seldom escaping endocarditis. In our patient, supposing him to have had ordinary rheumatism, there was nothing extraordinary in his escaping endocarditis. However, when the pericarditic friction sound became audible I regarded it as confirmatory of the truly rheumatic origin of the joint pains. I am very much inclined, however, to doubt whether both the joint pains and the pericarditis were not really septicæmic. If I only warn you not to jump too readily to the conclusion that joint pains are rheumatic, however likely the conclusion may seem to be, I shall not have related the foregoing facts in vain.

2. *Physical signs.*—Coming now to consider the physical signs presented by our patient let us take the condition of the heart first of all. The apex-beat was slightly displaced to the left, but there was no murmur or other indication of intrinsic disease, while the pleural or pulmonary condition manifestly present seemed to account for the slight displacement of the apex-beat to the left. The whole of the left side of the chest was dull from top to bottom, although the dullness neither transgressed nor fell short of the middle line. There was diminished—rather, annulled—fremitus over the whole of the left side. Over the upper part there was pure bronchial breath sound and over the lower part no breath sound at all. There was no trace of moist sound with the bronchial breath sound, and this statement held true throughout the period during which the patient was under observation. Indications of pressure on the large venous trunks were entirely absent.

Such, then, were briefly the physical signs, and from them and the symptoms already related what was the inference to be drawn? What was the diagnosis of the case to be? Before I saw the patient Dr. Brockbank, our resident medical officer, had aspirated the chest and drawn off a small quantity of serum with a hypodermic syringe, so that from the first I was aware that there was fluid in the left pleura, but I soon came to the conclusion that we had something more than pleuritic effusion to deal with. The history of hæmoptysis and the strumous scars on the neck suggested tubercle. The displacement of the apex-beat of the heart to the left of the nipple line seemed to me to be evidence against the explanation of the absolute dullness, which extended to the supra-clavicular region, by pleuritic effusion alone, and I came to the conclusion that the upper lobe of the left lung was consolidated—notwithstanding the absence of fremitus over it—and the lower lobe compressed by fluid, if not itself more or less consolidated. I was inclined to regard the case, indeed, as one of "fibroid phthisis" complicated with pleuritic effusion, but as time went on and I never heard moist sounds, although I auscultated the patient almost daily, I had considerable misgiving as to the correctness of this diagnosis. Tubercle bacilli were never found in the scanty sputa brought up. I constantly remind you in the wards never to come to the conclusion that you are dealing with a case of simple pleurisy or simple bronchitis without carefully examining for evidence of disease possibly lying behind these conditions. In this case I thought I found evidence of tuberculous disease in the history of hæmoptysis and in the strumous scars on the neck. There seemed to be no indication of pressure by a tumour in the mediastinum; there were, for instance, no enlarged veins. There was, again, no dullness to the right of the middle line at the upper part of the chest. Moreover, the distinct bronchial breathing over the upper lobe of the left lung was opposed to—in fact, negated—the consolidation, supposing it to exist, being associated with compression of the main bronchus. Complete dullness of a lung, with absence of breath sound and fremitus, is a common result of intra-thoracic tumour compressing the root of the lung, but in most of such cases there are some pressure symptoms, as enlarged veins, to guide us. In this case there were no pressure symptoms; moreover, the bronchi of the upper lobe were manifestly patent, and yet this lobe was absolutely dull on percussion.

3. *Strumous scars on neck.*—The scars on the neck already noticed seemed to be of the ordinary "strumous" kind, which is so common in this region, though their comparatively recent origin was noteworthy, considering the patient's age; but cervical adenitis is met with occasionally in middle age. Two examples have fallen under my notice within the last few years, in one of which strumous spinal disease developed later and proved fatal. The other case was a very remarkable one, and I will briefly describe it. In the spring of 1892 the man, who was about fifty years of age, came into Yates Ward suffering from vomiting and abdominal pain. It was found that he had a very distinct stomach tumour and his vomit contained no hydrochloric acid. There seemed to be no doubt that he had cancer of the stomach. However, under treatment, chiefly by feeding with peptonised milk, his symptoms almost disappeared, and he actually gained a considerable amount in weight; but during his stay in hospital he developed cervical adenitis, the lymphatic glands in the neighbourhood of the angles of the jaw becoming swollen and tender. There was also some febrile movement. This adenitis subsided, and the patient left the hospital very much improved in general health and relieved of his stomach symptoms. I saw no more of him for several months, when he again sought admission to hospital. It was evident at once that he was now very ill—in fact, a dying man. He was emaciated and cachectic looking, and had a large glandular mass at each angle of the jaw, but over the right tumour there was the most perfect "strumous" abscess one could wish to see. I repeatedly remarked at the bedside the typical tuberculous characters of this abscess. You know that the old-fashioned phrase "strumous" may now be translated into tuberculous. In spite of my recognition of the tuberculous characters of this abscess—it was small, superficial, and situated on a mass of solid new growth—I thought it necessary to try to associate the glandular tumours with the stomach tumour which we knew to exist, and it so happened that I had had, several months before, a case of the rare condition, a lymphoma of the stomach, so I was inclined to regard this case also as an example of lymphomatous growth—of lympho-sarcoma. The typical strumous abscess on the neck, however, caused me some misgiving, but I unfortunately did not seek for confirmatory evidence of its tuberculous nature where it might have been found—namely, in the lungs. I had examined the patient's lungs in the spring with a negative result, and did not re-examine them after his second admission. Post-mortem examination proved the stomach tumour to be colloid cancer, and the lymphatic tumours, which were present in the abdomen as well as on the neck, to be tuberculous. There was very early tuberculous disease of the apex of the right lung. Since I have referred to this case I will take the opportunity of relating to you another remarkable circumstance which it presented. In the spring the cancerous tumour of the stomach had been so easily felt that the patient was, one may say, a "show case" in the wards, but on his readmission I could not feel any tumour at all, and it was only several days later that I felt something which I thought must be the stomach tumour. I doubt if it was not merely a faecal mass which I felt this time. The necropsy explained why the tumour could not be felt on the patient's readmission. The colon had become greatly distended, and occupied the whole anterior aspect of the abdomen by forming a great descending loop of intestine. The stomach tumour was thus thrust upwards and backwards quite out of reach. If one had had more faith in the typical clinical characters of the small abscess on the large cervical glandular mass, and insisted on its tuberculous nature, in spite of the other circumstances of the case, one would have been right in arriving at the double diagnosis of cancer and tubercle in the same individual. I may add that even if the disease of the lung had been detected by physical signs it would not have proved absolutely that the disease was tubercle, for I once had a case in which lympho-sarcoma occurred at the apex of the lung and became excavated. The discovery of bacilli in the sputa would of course have settled the question, but the patient did not expectorate.

4. *Hæmoptysis.*—The patient whose case forms our subject to-day, you will remember, had had a slight hæmoptysis five or six weeks before admission, but the quantity of blood expectorated seemed to have been very small. A history of hæmoptysis, even slight, should always be considered of importance. Of course, tubercle is its most common cause, but it occasionally occurs in malignant tumour of the lung, as, for instance, in the case of excavated tumour of the lung to which I have referred and in which hæmoptysis was the

first symptom. The case is fully reported in THE LANCET of Oct. 27th, 1888.

I will now read you Dr. Kelynack's report of the post-mortem examination of our present case and will conclude by making a few comments upon the explanations of its clinical features, which the results, found post-mortem, afford.

Necropsy.—The body was that of a well-built and well-nourished man. The pericardium contained an increased amount of fluid, with a few shreds of flaky lymph. The cavities of the heart were a little dilated; there was no endocarditis; there was left sero-fibrinous pleurisy. The right lung was congested, deeply pigmented, and crepitant throughout; there was no tubercle or new growth; it weighed 1 lb. 8 oz. The left lung was diminished in size, and compressed by surrounding pleuritic effusion; it weighed 3 lb. 2 oz. On section, the upper lobe was collapsed; the central portion was infiltrated with nodules of soft, white, new growth, evidently of a sarcomatous nature. The lower part of the lung was in a state of acute suppurative pneumonia. The larger divisions of the bronchi going to the lower lobe contained large, white, soft, polypoid masses of new growth, which almost completely obstructed their lumen. The growth was apparently primary in the bronchial glands or peri-bronchial glandular tissue. The mediastinal glands were not enlarged. There was no new growth in the mediastinum. Microscopical examination showed that the tumour consisted of a fibrous stroma, with abundant large round cell infiltration, and was, in fact, a lympho-sarcoma.

Remarks.—This patient, then, was admitted to hospital ostensibly for his joint pains. He made no complaint of chest symptoms, and it was only by our routine habit of examining patients generally that we discovered the physical signs of lung disease that were present. These having been discovered, inquiry elicited a fact to which the patient attached little importance—so little that we should have heard nothing of it without inquiry—namely, spitting of blood. Pressure symptoms, you know, are the great indication of tumour within the chest, but in our patient they were apparently absent. We generally include physical signs when we use the term “pressure symptoms,” and if this be permissible in our case then we had a pressure sign—namely, the condition of the lower lobe of the lung, which obviously depended on the obliteration of its large bronchus, a common result of intra-thoracic new growth; but I do not think we could have ascertained this condition during life in the presence of the pleuritic effusion. There is some doubt as to the lower level of the fluid. I am inclined to think it did not extend over the lower lobe and I think one can see in the false membrane of the pleura immediately below the upper margin of the lower lobe a line of demarcation which seems to me to define the lower fluid level. It is quite certain, however, that if the fluid did extend to the base of the pleura it did so only in a thin layer over the surface of the lung and it is almost as certain that the lung consolidation had preceded the pleuritic effusion. The physical signs—absence of breath sound and fremitus, and dulness—were just as explicable by consolidation of the lung with obliteration of its bronchi as by pleural effusion. The slight displacement of the apex-beat to the left was a point in favour of my view. Supposing that the effusion extended to the base, then the only feasible explanation of the displacement of the apex-beat was that the effusion had diminished and was subsiding, an explanation which the extent of the effusion above, it seems to me, hardly bore out; but it is only fair to note that even above the effusion did not extend to the right of the middle line. It is an extremely rare condition to find an effusion limited to the upper portion of the pleura and consolidation of the lung below. Granting in this case that the fluid did extend to the bottom of the pleural cavity, no one can deny that the essential condition present in our case was consolidation of the lower lobe of the left lung with obliteration of its bronchial communication and compression of the upper lobe of the same lung by pleuritic effusion. There can be no dispute as to these two facts. Now, what was the state of the breath sound over the left lung? We had pure bronchial breath sound always over the upper lobe and no breath sound at all over the lower lobe. It is difficult to imagine a more instructive case in relation to the cause of bronchial breath sound over the chest. You know that I hold Skoda's belief with regard to bronchial breath sound in so far as he held it to be the communicated glottic sound. Occasionally, though rarely, we hear the whispered voice over the chest when bronchial breath sound is present; but the whispered voice is the articulated expiratory breath

sound and the articulation takes place above the glottis, therefore the possibility of the glottic breath sound being conducted to the surface of the chest cannot be denied. What is the condition which renders this possible? I answer, the consolidation of the vesicular structure of the lung for a certain depth round the bronchial tubes; but such consolidation is brought about equally by compression of the lung by pleural effusion, and by exudation into the air cells themselves, as in pneumonia. In neither of these conditions can there be movement of air in the bronchi of the compressed or consolidated lung; such breath sound as may be heard must be communicated from elsewhere. I say it is from the glottis. If from any cause in consolidation or compression of the lung the patient's bronchial tubes become occluded and this theory be correct, then we should hear no bronchial breath sound. In a case related to you last session I adduced evidence to show you that we may have a “silent” pneumonia¹ from obstruction of the bronchi by tough exudation. This morning I have brought before you a case which, on the one hand, proves that bronchial breath sound may be heard over a pleuritic effusion, provided that the tubes of the airless lung are patent, and, on the other hand, that over the consolidation of the lung no bronchial or other breath sound is heard, provided that the bronchial communication is occluded.

The diagnosis of “fibroid phthisis and pleuritic effusion” was made on the day of admission of the patient; but the entire absence of moist sounds soon threw this diagnosis into question, while the apparent entire absence of pressure symptoms, in the ordinary sense, was evidence against intra-thoracic tumour, had such been suggested. Had the absence of breath sound extended all over the left lung, tumour would have been reasonably suggested, and this, too, notwithstanding the presence of pleural effusion; but the concurrence of bronchial breath sound over the upper lobe and silence over the lower lobe was a condition which I have never met with before in intra-thoracic tumour and one which must be very rare. Its cause in this case—namely, consolidation of the lower lobe with compression of the upper lobe by pleural effusion—must be an equally rare condition. I have stated that the consolidation of the lower lobe by a pneumonic process was really a pressure symptom, although it could not be recognised as such at the bedside. Such consolidation is well known to be frequently associated with intra-thoracic growth compromising the bronchi passing to the affected portion of the lung. From the first the absolute dulness extending over the whole of the left lung, and yet not passing beyond the middle line, together with the slight displacement of the apex-beat of the heart to the left, told of some unusual condition. We knew also from the first that there was pleural effusion present, but evidently this was not all. “Fibroid phthisis” seemed to me, as I have said, to be the most likely explanation. In its favour were the history of hæmoptysis and the “strumous” scars on the neck; but opposed to it were the entire absence of moist sounds over the diseased lung during the whole period of observation—five weeks—and the almost entire absence of cough and expectoration—in short, of lung symptoms. Anomaly of symptoms and signs should always lead us to suspect the presence of some unusual condition or combination, and so make it incumbent upon us to investigate the case as a whole with the utmost care.

NEUROLOGICAL FRAGMENTS.

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No. VII.

TEMPORO-SPHENOIDAL (LEFT) ABSCESS FROM EAR DISEASE;
RIGHT HEMIPLEGIA, WITH LATERAL DEVIATION
OF THE EYES AND APHASIA; TREPHINING;
RECOVERY.

THERE has been recently under my care in the London Hospital a patient suffering from temporo-sphenoidal (left) abscess successfully operated on by Mr. Openshaw; the abscess was caused by disease of the left ear. There were difficulties in investigating the case, as the patient was deaf in his left ear and did not hear well with his right ear. He

¹ THE LANCET, April 29th, 1893.