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SOME RARE AND OBSCURE PULMONARY AND PLEURAL CONDITIONS

THE question of what form my address should take presented difficulties to me, but I decided that a few observations concerning rare and obscure lung and pleural conditions which are diagnosed with difficulty might prove of interest.

The first two conditions I shall mention are those which simulate pneumothorax and, so far as my experience goes, are only to be met with in advanced phthisis.

I.—*Cavity Simulating Pneumothorax.*

The first case I have to describe is that of a female patient who, on admission to the infirmary, was suffering from moderately advanced phthisis of the upper lobe of the left lung. Several cavities were present; these, by destruction of the tissues, ultimately formed one large cavity, practically involving the whole of the lobe, and accompanied by amphoric breathing and all the other usual physical signs. At this stage, however, the physical signs became misleading: the flattening disappeared from the side, which became immobile. The percussion note was resonant except at the apex posteriorly and the base posteriorly, where it was dull. There was loss of vocal fremitus and the heart was slightly displaced, but the palpitation which frequently accompanies left-sided cavitation, which had been present, had then ceased. On auscultation there was a total absence of breath sounds and of adventitious sounds. Vocal resonance had disappeared and the " bruit d'airan " was easily and clearly elicited. There was no succussion splash usually found in a pneumothorax of a few weeks' duration. As many, though not all, of the signs pointed to pneumothorax a post-mortem examination was awaited with interest; this I was able to obtain, and the findings were as follows: (1) The pleura was everywhere adherent. (2) The lung tissue of the left upper lobe had completely disappeared, except for a small consolidated piece at the apex posteriorly, cut off from air, but not from vascular supply. The lower lobe was compressed into a solid

mass, which was not aerated.

The simulation of pneumothorax was due to the pleura being everywhere adherent, the upper lobe being excavated to the pleura, a valvular action of a damaged bronchus permitted air to enter, but not to leave the cavity. This cavity ultimately became distended, exerting a positive pressure on the lower lobe and destroying its physical and physiological activity. The side thus became an air-sac which, preventing collapse of the ribs, gave the physical signs of a pneumothorax.

II.—*Ballooning of the Lung.*

This condition may occur in advanced phthisis where there is excavation, may or may not terminate in pneumothorax; I have met with a considerable number of such cases. The attack is moderately rapid, with all the physical signs of a pneumothorax – tension more than pain in the side, anxious expression of countenance, breathlessness, and – if the trouble is on the left side – great acceleration and marked weakness of the pulse, owing to displacement of the heart. On inspection the side is distended and immobile, the percussion note is hyper-resonant; on palpation there is loss of tactile fremitus, and on auscultation a complete loss of breath sounds. The "bruit d'airan" is possibly not quite so clearly heard as

in true pneumothorax. These physical signs would justify the diagnosis of pneumothorax, but they may all be transitory and clear up in 24 hours.

One of my cases of this type was most interesting. He first had ballooning of the lung on the right side; it cleared up and in a few weeks appeared on the left side. There also it cleared up, but later the patient developed true pneumothorax on the right side. The trouble is, I think, caused by a semi--detached piece of lung blocking the bronchus, permitting air to enter, but for the time being not allowing any to escape. Nothing was coughed up which might indicate the cause of blockage, nor was I able to get a post-mortem in any case. I have not been able to trace any reference to this condition in the literature; but if some member of this society has come across a similar case I hope he may be persuaded to read, at a later meeting, any clinical notes he may have which bear on this peculiar pulmonary condition.

I have seen many large cavities which during life presented the ordinary physical signs on percussion, and on auscultation yielded cavernous or amphoric breathing, without presenting signs of pneumothorax. I, therefore, hold the conditions described in the above sections must be present before a large cavity can truly simulate pneumothorax.

III. —*Broncho-Pleural Fistula.*

If pneumothorax occurs in a patient suffering from pulmonary tuberculosis (especially if one lung only is involved) – provided, of course, that the patient has recovered from the shock – there is usually effusion of fluid, which later becomes purulent. The question then arises: What line of treatment should be adopted? Should there be "masterly inactivity" by leaving the condition to Nature? Should the aspirating needle be used, or the side opened and drained? If the first line is adopted the patient, after a time, complains of the weight of the fluid, which becomes distressing to a person in a weak condition. On the other hand, should the ruptured part be large and patent the patient's cough may be aggravated by the oozing of fluid – or, it may be, pus – into the bronchi. The second line of treatment – aspiration – relieves both of these conditions, but the fluid will certainly re-form, and will, after a time, require again to be removed. It will then become a series of re-fillings and removings during the patient's life. I tried the third line of treatment – incision and drainage – on several cases years ago. The patients seemed to get on fairly well for a time, and after a few months the discharge became serous fluid alternating with pus. Ultimately, however, the sound lung became tuberculous and the patient sank. I secured post-mortems and found in each case a small opening at the root of the lung the size of a goose-quill, with hard edges, leading from a large bronchus into the pleural cavity. After seeing these postmortem conditions I gave up drainage, feeling that I had subjected the patients to the annoyance of a drainage-tube, maybe for months, and to the fatigue of being dressed twice daily, without the slightest hope of healing the ruptured part. As it is impossible to tell where the rupture may be situated, and as it is a question of relief, not cure, I consider that this class of patients can be made more comfortable by aspiration than by any other form of treatment: therefore I have, since that time, adopted this course.

IV.—*Sodden Pleura.*

Cases of pleural effusion are very frequently met with; they generally present all the recognised signs, but occasionally one is encountered in which vocal fremitus is still present and a large bronchial breath sound can be heard all over the side. The pleural cavity must be full in these cases; I have found them more frequently in the male than female sex, but the condition which I am just going to mention was to all intents and purposes an ordinary case of pleural effusion. The patient, a big, strong-looking man of 45 years, who had always enjoyed good health, found that for a number of weeks before admission to hospital he was very short of breath on slight exertion, which caused him to give up his employment as a labourer. He did not give any history of pain in the side. When I examined him in the Infirmary I found his right side was dull to the clavicle, so had him prepared for aspiration. This I did the following morning, taking all the usual precautions, and removed slowly and gradually 120 oz. of clear fluid, still leaving a considerable amount in the pleural cavity. The patient had no discomfort during or after the operation. Next day on examination there was no detectable change, but on the third day after aspiration I thought I got a suspicion of air in the pleura, and on the fourth day a splash was quite distinctly heard. The side filled up again rapidly in two weeks' time and the air disappeared. I aspirated him on four occasions, with similar results each time: but when the side was full for the fifth time he sat up in bed to have his breakfast and dropped back dead. I was able to get a post-mortem, and on opening the thorax we found the heart, and left lung quite normal, but at least four quarts of fluid poured out of the right side. The right

lung was compressed; there were no adhesions anywhere, and the pleura, parietal and pulmonary, was thickened (*not* on account of deposit of lymph) and of a spongy nature. We tested the lung in every available way to see if there was a leak anywhere, but could not discover the slightest sign of one. The question arose as to how the air gained access to the pleural cavity. It was not owing to puncture of the compressed lung when the needle was introduced, nor to carelessness in manipulation of the instrument during removal of the fluid: only on the third day was there sufficient air to create the suspicion of a splash, so that there could not have been a free entrance for it to the pleural cavity. Might it have been that the inspiratory pressure of the air was greater than the resisting power of the lung and pleura, permitting the air to diffuse slowly into the pleural sac?

V.—*Interlobar Effusions.*

Interlobar effusions and empyemata are, I am afraid, not sufficiently in our mind's eye. When the temperature keeps running up and down after pneumonia one thinks of pus in the pleural cavity, or it may be of T.B.; but that the condition might be due to a small quantity of pus or of fluid between the lobes of the lungs is very frequently overlooked. In 1914 I had two very interesting and instructive cases of the above type. Amongst a number of pneumonia cases two men continued to have a sharp rise of temperature for almost a mouth from the commencement of their attack till inflammatory signs had cleared up; they had annoying coughs, not due to throat trouble, with very trifling amounts of expectoration. There was not much sweating, no T.B. were found in the sputum, and the kidneys and other organs were healthy. Not being satisfied with their condition. I decided to put a needle into whatever part of the chest showed the slightest variation from the normal, either in percussion or palpation. In the first case I got 2 oz. of pus between the upper and middle lobe of the right side, and in the second 1 1/2 oz. of pus between the upper and lower lobes of the left side. In each ease the puncture was deep and the result satisfactory; the temperature dropped immediately, cough disappeared. Both men had uninterrupted recoveries, and were with their units training for France in a few weeks' time.

VI. —*Loculation of Fluid.*

Loculation of fluid or pus is frequently very puzzling, especially in the region of the pericardium. About 18 months ago I saw a young man in the country who had had a sharp attack of pneumonia accompanied by a friction rub seven weeks previously. Although all inflammatory trouble had passed off he was not improving; he still had an unsatisfactory cough and some temperature at night, with loss of appetite, but his greatest trouble was, as he described it, "a big lump " in his chest, which seemed to be crushing him all the time. The doctor in attendance, suspecting a pleural effusion, needled him on several occasions over the base without any result. On my examination of the patient I found a slightly diminished resonance on percussion over the base, but vocal fremitus was present, the area of deep cardiac dullness was increased outward to the left, with the apex beat well inside the nipple line. On auscultation the heart sounds were clear, but the respiratory murmur was weaker in the pulmo-pericardial area than elsewhere. Taking these signs into consideration, with the fact that this was the region where he complained of having the "lump,"

I decided to aspirate at this site. I reached the fluid — though not till I had driven the needle home almost to the head — and removed about 9 oz. of clear fluid. The aspiration gave the patient immediate relief, and without any recurrence of the trouble he made an excellent recovery. This was evidently a loculus formed by the pulmonary and pericardial pleura.

These cases illustrate how much constitutional trouble can be caused by a very small quantity of pus or fluid under tension, and show the value of using the aspirating needle, boldly, if necessary, when you have reason to think fluid exists. I have no doubt that by the removal of pus and fluid in these cases serious trouble at a later period was prevented, either as a general empyema or by bursting into a bronchus, setting up a septic inflammation of the lung tissue en route, and, it may be, the formation of an abscess with permanent injury to the lung.

VII. —*Acute Congestion of the Lungs.*

Congestion of the lungs is an everyday expression, which to the layman may mean anything from an ordinary bronchial catarrh to capillary bronchitis, but to the medical fraternity it may indicate the commencement of serious inflammatory trouble in the lungs or be secondary to disease of some other organ. The congestion of the lungs I am about to speak of is in my experience very rare; I have only met with four cases of it. Judging by the cases I saw it appears to attack those of 45 years and upwards; the last of these patients was 70 years old and her condition was typical of that of the other three.

This patient, a healthy old lady, had been in her ordinary good health up till the evening previous to my seeing her, when she complained of not feeling well, with a tightness round her chest, as if her

clothing was restricting her breathing: at no time did she have any pain. As this continued her family doctor was sent for: he found the temperature was 100.4° F., with the pulse slightly over 100. The breathing, although faster than normal, was not hurried. At this time he found no adventitious sounds in the lungs, and thought she was developing a bronchitic attack; on the following morning her condition had become worse, and as the family were getting anxious I was asked to see her in consultation with him that evening. On my examination I found an indistinct cyanosis over the body. The temperature was 101.2°, the pulse 110, the rhythm was regular, volume small, with moderate tension. Respiration was 38 to the minute but not laboured. She had a short cough, but only a small quantity of expectoration, which was viscid and difficult to get up. The urine was normal. On percussion of the chest there was a slight but uniform impairment of resonance. Vocal fremitus was difficult to elicit but it seemed diminished. On auscultation vocal resonance was diminished, and over the whole lungs from apices to bases small hard crepitant rales were to be heard. The heart sounds were perfectly clear and the condition of the arteries was, for her age, good.

The French writer, Woillez, described a condition which in some respects agrees with this case – viz., defective resonance, moderate cough, with râles in the lungs and a slight temperature, but he mentions an initial chill and pain in the side. My cases did not have either an initial chill or pain in the side, just a feeling of constriction in the chest.

PROBABLE CAUSES OF SECONDARY ORIGIN.

What is this affection? Is it of primary or secondary origin? I shall briefly discuss a few probable causes of secondary origin:–

1. O*edema of the Lung.* – If it was due to this cause there would have been a profuse discharge of thin, bloody, frothy fluid – there might be pints of it in a short time, if the patient survived, whilst in my cases there was only a small quantity of viscid mucus. This of itself excludes oedema.

2. *Back Pressure from Cardiac Disease.* – This pressure is of a slow insidious nature, following on an endo- or myocardial condition, or both combined, but in these cases there is usually a history which draws attention to the cardiac region. The patient may only suffer from shortness of breath on slight exertion or puffiness of the ankles, &c., and if the effect of the back pressure shows in the lungs it will be concentrated at the bases, also the degenerative process is usually slow and covers a considerable period of time. If the trouble is brought on by sudden and severe exertion the condition then is primarily cardiac and the symptoms are heart symptoms, with alteration of rhythm and of tone in the sounds in the right side of the organ, and probably an increased area of dullness: in these cases, if the lungs are affected at all after the initial engorgement has passed off, it will probably be something of a bronchitic character.

3. *Abnormality of Kidney Function.* – Renal origin may, I think, be excluded, as the kidneys in all of my cases were functioning well.

4. *New Growths.* – These may also be excluded, as histories and signs were all against such causation.

5. *Inflammatory Trouble in the Lung.* – In this connexion we have the history of rigors, high temperature, high pulse-rate, &c., at the commencement of the attack, and later, dullness on percussion and increased vocal fremitus and resonance, unless there is only a small patch involved in the centre of a lobe. The crepitant stage is transient and passes rapidly into the stage of consolidation. Tubular breathing, which is pathognomonic of inflammatory consolidation of lung tissue, is certain to be detected early in ordinary cases, or later if the lung is massive. None of these signs or symptoms applied to my cases: unfortunately, I was not able to see the condition post mortem.

I came to the conclusion that it was a primary acute congestion of the lungs, attacking without apparent cause, of short duration, and always fatal in two to three days.

I have chosen the above seven conditions as being the most interesting that I have experienced during the 35 years I have been interested in the diagnosis and treatment of pulmonary conditions.