REMARKS ON PLEURITIC EFFUSION.

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EFFUSION into the pleural cavity, as the sequel of one or another form of disease, is by no means of uncommon occurrence. Formerly, and most especially before the physical signs of thoracic complaints were known, as now they are known, liquid accumulations in this serous sac were often not recognised; and, it is no exaggeration to say, that innumerable patients were lost, who, had they lived in these days, would have been saved, and restored to health and comfort. There are few instances in the practice of medicine in which a rightly directed treatment, and sometimes in which instrumental means, can be so fully and so manifestly brought effectually to bear. When the effusion is detected in notable quantity, it is most frequently the product of inflammation of the pleural membrane, and very generally such inflammation has been, and may continue to be, of the subacute or latent form. Large quantities, however, of fluid sometimes collect in this sac, in an active, passive, or mechanical manner, without being preceded or attended by inflammatory products, when it is mere hydrothorax; but it may be observed, that hydrothorax is usually a double, and not a single, pathological condition, and the sequence of serious organic disease of the heart or great vessels, or it may be of renal degeneration; and when it obtains, the circulatory and respiratory secretions are so interfered with, that dyspnoea and threatened orthopnoea become prominent symptoms, as evinced by facial lividity and anxiety, clammy perspiration or coolness of expired air. The sequel now about to be considered, and illustrated by several examples, is chiefly that form which originates from the inflamed serous membrane lining the chest, and which, as the rule, occupies but one cavity of the thorax, and, it may be added, more especially the left side. Double effusion, from such cause, does sometimes occur, but very exceptionally. Effusion may result in the sthenic types of pleuritic inflammation, in those which are of the fibrogenic character. The more plastic materials are then thrown out and serous exhalation is in less marked degree; but these types are far less common than those in which the exudates are mostly serous or sero-purulent, and, consequently, not formative, if the intercurrent and localised examples of pleuropneumonia of pulmonary phthisis be excepted. The changes which come to pass within the chest are mainly influenced by the relative proportion of the coagulable or albumino-fibrous parts, in the same acute forms of pleuritis, and relatively not the degree of plethora and high vitality of the patient, the plastic products are disposed to become organised, and the contrary is the fact, as, in a low and depressed organism, fluidity then becomes the significant event.

Again, the part of the thorax which is the seat of primary lesions determines, in marked manner, the kind of result which eventuates. In the upper part of the pleura, opposing surfaces are in more immediate contact, hence the common prevalence of adhesion at that situation; and as liquid effusion naturally gravitates into the lower portions of the pleural cavity, it is thus that the pleuræ are kept apart, and that the depending situations are prevented from adhesion, and that there the first signs of effusion are presented.

The ancient and older physicians knew little more than two symptoms indicative of pleural effusions. They mainly relied upon Hippocratic fluctuations, and inability to lie on either side. The modern means of diagnosis have conferred great certitude in the detection of its presence. The subjoined examples will show that, in many instances, there is a great and salutary tendency in the way of absorption, and I believe that this tendency can be much aided by the timely use of suitable agents, and by placing the patient under a judicious general mode of treatment. It is, however, a fact, which need hardly be insisted upon, that, in many cases, other methods are imperatively demanded for the removal of the fluid, or a fatal termination would inevitably ensue. Sometimes nature indicates the mode for adoption, by spontaneously giving an exit to the long pent-up secretion (empyema of necessity); but nature's process is slow and tedious, and the relief should be anticipated. In scarcely any examples of this affection is it possible to correctly pronounce the kind of fluid which is effused; it may be simply serous, sero-purulent or absolutely purulent. Various combinations of the plastic and liquid exudations are discovered in the same subject, and there is no doubt that the exudation, which at an early period is serous, may form consecutive and vascular changes in the membranes, or form a more

general alteration in the vital fluids, become purulent when no air whatever has been admitted into the cavity, precisely as pus is sometimes secreted in the other great serous cavity, that of the abdomen.*

Latterly, much has been written, and great light has been thrown on the nature of this affection, and it is now beyond dispute that these collections within the chest walls are not to be regarded with so much dismay as they once were, and that the disease is far more amenable to a rational and properly selected treatment. In the following cases it will be seen that large quantities of effused fluid can be absorbed, and a full recovery eventuate. It has also been, during the last few years, amply shown that the drawing off of the fluid can, in very many instances, be had recourse to, not only without any of the risks which formerly were entertained, but with the best effects.

CASE I. Not long ago, I was summoned into the country to see a lady who had just returned from a visit in the north of England. This lady was a thin and delicate person, 65 years of age, and for many years she had not enjoyed good health. During this visit to the north, she had a severe attack of pleuro-pneumonia, and had been treated by two physicians of local celebrity. As soon as she could bear the journey, she returned home. When I saw her, she complained of shortness of breathing; she said it distressed her to go up stairs, and that even the motion of her carriage gave uneasiness. The lower two-thirds of the right thorax showed enlargement; the intercostals were tense, and she could not lie on her left side. There was marked dullness on percussion up to the angle of the scapula. On the application of the stethoscope, there was no vesicular murmur over dull area, but, over that area there were tubular breathing and bronchophony. The line of dullness varied on the movement of the trunk. The pulse was accelerated and the digestion much impaired. She was treated at the last by blisters, mild alteratives, iron, and quinine, and cod-liver oil. After the blisters, the full use of iodine externally was employed. She was eleven weeks under my care, and made a full recovery.

Thoracentesis was not insisted upon as absolutely requisite in this case, although I would have recommended the operation if the same physical signs had been presented in some other patients. This lady was of extremely nervous temperament; her friends were very averse from any instrumental interference; and I was earnestly requested to try such means as might produce absorption.

CASE II. William Payne, aged 37, a labourer, was admitted into the infirmary, March 24th, 1870. He was a tall and powerfully built man, who had usually enjoyed good health. Before his admission into the institution, he was under the care of our house surgeon, Dr. Hall, for a dangerous attack of pleuro-pneumonia. I then saw him with Dr. Hall, and, for a time, his recovery was very doubtful. When he came into the infirmary, there were all the general symptoms and physical signs of pleuritic effusion. Inspection showed the right chest to be larger; it measured more than the left; its contour was smooth and bulging. Percussion elicited a dull, dead sound over the lower two-thirds. At the subclavicular and supraspinous fossa regions, there was excessive resonance. Auscultation gave tubular breathing and bronchophony over the dull area. He could not lie on the left side. There were dyspnoea, increased by exertion, accelerated pulse, and an anxious facial expression. He was treated with blisters, iron, quinine, and, subsequently, iodide of potassium internally, and the application of iodine externally, in the proportion of one part of the tincture of iodine and three of water. He was discharged cured, May 19th, having been eight weeks in the hospital.

This man having all the appearance of possessing a vigorous and an unimpaired constitution, I resolved, for a time at least, to try the process of absorption. He soon began to improve; and, with the progress he made, the idea of paracentesis was discarded. Dr. Hall saw him a few weeks after he left the hospital, looking robust and healthy; and the man declared he had never felt in better health.

CASE III. In July 1870, Mr. R. came to consult me for, in his own words, "difficulty of breathing and a weight on his left side". He was a healthy, robust-looking man, upwards of sixty. He told me that, a few weeks before, he had had an inflammation on the chest. The nature of his complaint was at once obvious. There was bulging of the left side, it measured more than the right; the apex-beat was felt beyond the middle line of the sternum; there was that absolute dullness denoting fluid. Over a large space, there was no vesicular murmur, nor vocal fremitus, and, at the interscapular space, the voice was bronchophonic. The right chest was super-resonant, and the breath-sound exaggerated. He was twice blistered, had iron, quinine, and cod-liver oil, and iodine was applied externally. He was requested to live well, to take four or five glasses of port wine a day, and to keep as still as

* This pathological fact I have more fully dwelt upon in the article on Peritonitis, in Reynolds's *System of Practical Medicine*.

he possibly could; not to walk, nor to ride on horseback. He made a rapid and full recovery. At the end of five weeks, he ceased coming to consult me.

CASE IV. Jasper Ashdown, a fresh-coloured young man, aged 20, was admitted into the infirmary on July 12th, 1870. He had had pleurisy, and he came to the institution for difficulty of breathing, and pains and weight in the left side. The history of his case, the general symptoms and physical signs, left no sort of doubt as to the presence of pleuritic effusion. He was treated like the foregoing patients, but, in addition, he had the iodide of potassium in the decoction of broom tops. He was discharged at the end of two months with very little dullness remaining, and which, it is probable, was consequent on some adhesion of false membranes.

CASE V. George Parsons, aged 27, became an out-patient under the care of Dr. Hall, and was first seen October 28th, 1870. He then complained of difficulty of breathing. On auscultation, there was friction sound at the angle of the left scapula, and dullness towards the thoracic base. Ultimately, three-fourths of the left chest was dull, and there were all the accompanying and common signs of effused fluid at the time I saw him with Dr. Hall. The external application of iodine was applied in the manner recommended to me by Dr. Fuller. The entire dull area was painted over with the tincture of iodine, diluted in the proportion of one of the tincture and seven of water. The half of a waistcoat was made with two thicknesses of new flannel, and one of calico-cloth, and this was continually worn. At the end of five weeks, the dullness had disappeared, and the fluid had become entirely absorbed.

CASE VI. Samuel A., 21, a discharged soldier, was admitted as an in-patient June 27, 1870. The features were drawn and bloodless; he looked extremely ill, and as if affected with some fatal malady. The simple exertion of walking rendered his breathing quick and laborious. He began to have a cough and chest affection, as he termed it, before Christmas, and had been treated at the respective stations of his dépôt, which were Chatham, Bradford, and Manchester. When at these places, he had had cough mixtures, but had no poultices, blisters, or other remedies. In fact, the nature of his illness had not been discovered. His chest had never been examined. He was discharged the service, and returned home. On admission, he was much emaciated, and the skin was harsh and dusky. Inspection showed the right thorax larger than the left. It measured an inch more than the other side. The præcordial impulse was felt over an abnormally large area. The apex beat was to the right of the mesal line. Percussion at all parts of the left chest gave a short, dull, dead sound. There was no tremor imparted by the voice to the flat hand. Percussion over the right thorax gave abnormal resonance, and vocal fremitus could everywhere be felt. On the application of the stethoscope to the left chest, it was almost silent; even so high up as the subclavicular spaces there was no vesicular murmur. At the superclavicular and interscapular regions, distant tubular breathing was alone heard. There was supplementary breath-sound over the right chest, and there, at several places, the murmur was puerile. He had a loud, dry, barking, incessant cough, which no remedies seemed to alleviate. Pulse 120; respirations 35; temperature 97; and the digestive functions were much impaired. Shortly after his admission, my colleague Mr. Marsack kindly, at my request, introduced a trocar between the fifth and sixth ribs, but no fluid came away. I still, however, gave it as my opinion that a large quantity of fluid existed, notwithstanding that pyogenic membranes, or absolute pulmonary adhesion, presented its escape. The kind of treatment before described was used, but with no benefit. He became anasarctous, and, the end being obvious, he wished to return home. He was discharged, and died at Tonbridge a few weeks afterwards.

Mr. Cleveland Smith very kindly sent me an account of the necropsy. The left pleural cavity contained between three and four pints of in-odorous straw-coloured serous fluid, and the pericardium nearly a pint. In the right pleural sac there was a small quantity of effusion. The left lung was small and consolidated. It was adherent to the chest wall. The superior lobe was friable, and readily broke upon pressure, when vomicæ, containing pus and tubercular deposit, as revealed by the microscope, were discovered. The right lung was not diseased. The heart was normal, and the pericardium non-adherent. This man's case was very illustrative of that low and insidious form of thoracic effusion which is not infrequently associated with tuberculosis. The pleura takes on a masked form of inflammation, and copious exudation becomes a prominent sequent.

CASE VII. Ann Lawrence, aged 40, and who had eleven children, was admitted into the infirmary in April 1870. She had had pleurisy three months previously, and, on admission, there was great dyspnoea; the breathing was much accelerated on the least motion, the features were pinched and careworn, and she looked extremely ill. I shall not stop to give her symptoms and the physical signs in detail, but shall

merely add that there were the broad and very apparent characteristics of effusion into the left pleural sac, the apex-beat being felt beyond the right sternal margin. On April 13th, Dr. Hall, at my request, introduced a trocar at the sixth interspace. Sixty-three ounces of clear greenish straw-coloured serum were drawn off to the patient's instant and great relief. That evening she could lie on the right side, which she had not been able to do for several weeks. For some days, she appeared to progress favourably; she then, without apparent cause, became worse, and gradually sank on April 23rd. Inspection was not allowed.

This case, like the last recorded, it is exceedingly probable, was one of which tubercle was the cause. Her emaciated and general appearance pointed to a chronic and wasting disease.

CASE VIII. Ann Sayers, a little girl, aged 10, was an out-patient under the care of Dr. Hall. She had scarlet fever in December 1870, and which was followed by scarlatinal dropsy. The urine contained a very large quantity of albumen. There were also numerous casts, epithelial cells, and blood-discs. She had acute pleuritic pain in the right chest, and dullness and effusion eventuated. The respiration became most distressing. On January 26th, thirteen ounces of purulent matter were drawn off; and, on February 9th, 1871, Dr. Hall again introduced the trocar, and twelve ounces of thick creamy pus were taken away. The child received momentary relief after each operation.

I prognosticated that the effusion in this case would be purulent, because it was the sequel of scarlet fever, and in a subject affected with renal poisoning. She afterwards died of uræmia.

CASE IX. On October 16th, 1870, I was called to see a young lady, aged 15, who was in acute rheumatism. She was placed in blankets, and the alkaline treatment was prescribed. The large joints became swollen. There were no cardiac symptoms, and, at the end of three weeks, she was convalescent. She then had a chill, the fever returned, the large joints again swelled, the temperature rose to 104, and very serious peri- and endo-carditis supervened. There were extensive effusion into the pericardium, pleuro-pneumonia and great effusion into the left chest, with renal affection, being also the complications. For some time this young lady was in extreme peril. She slowly made progress towards amendment, and the graver symptoms subsided. She was blistered. She took the iodide of potassium; the iodine ointment was sedulously used; and she wore the half-waistcoat before described. I paid my final visit to her on February 7th, 1871. All dullness had vanished, both at the cardiac region and in the left chest. The breath-sound could be heard to the very base of the lung. The only trace of her dangerous illness was a slight systolic *bruit*. I examined her with the stethoscope in October 1874, when no trace of valvular disease could be detected.

CASE X. On October 19th, 1870, I was requested to see a young gentleman, aged 20, who was pursuing his studies at an establishment in the country. He was a tall, broad-chested, and powerful young man. He looked pale, sickly, and depressed. In the previous March, when in the West of England, he had pleurisy. He told me that since that illness his breathing had been affected. He complained that he could not walk quick, go up a hill or up stairs, without difficulty, and that he could not lie on his right side. There were all the characteristics of left chest effusion. The dullness was most distinct. The apex-beat could be felt at the middle line. I suggested thoracentesis. His tutor and himself begged that a trial might first be given to medical remedies. He was treated as before described. He had iodine tincture diluted with seven parts of water applied with the half waistcoat. A generous diet, wine, and quiet were recommended. He made a full recovery, gained a stone of flesh, and my last journey to visit him was December 18th.

CASE XI. I was requested on September 30th, 1870, to visit A. T. When I arrived, I was introduced to a gentleman seated up in bed. He was a large, broad-chested man, aged 35, who had not particularly the aspect of an invalid. He told me that he then held an official position in London, but had been obliged to absent himself for a time from his duties. He said that, in former years he had had great powers of endurance; that he had, at twenty years of age, commanded an expedition of seven hundred men up the Nile, when he went through great exertions. Up to 1868, he had been in a cavalry regiment in India. In the spring of 1867, he had an attack on the chest, for which he was blistered. After that illness he went to the hills; but this chest attack had left difficulty of breathing, a frequent feeling of suffocation, and a proneness to syncope. He relinquished his military position and came home. On his return, he looked better in the face than his friends expected. They doubted that his retirement had been imperative, and much family misunderstanding ensued. He consulted two London physicians of eminence. One said little was the matter except a weak heart. The other declared, as the patient left his con-

sulting-room, "that from head to foot he was as sound as a bell". He was subsequently under the care of a well-known physician in a fashionable watering-place, and also the family surgeon in town.

I percussed him beneath the clavicles, and there was perfect resonance. I then applied the stethoscope, and the vesicular murmur was distinct and clear. I placed my flat hand at the præcordial region, but could feel no impulse. I desired him to strip. There was bulging of the left chest-walls. The sides of the thorax were not symmetrical. Further investigation proved all the physical signs of left chest effusion. Its surfaces were smooth and even, the dulness was absolute; it was the kind of dulness which fluid alone can give. There was no fremitus nor vocal resonance. The respiratory sound was abolished. The breathing was tubular, faint, and distant; the apex-beat was lost, and mensuration added to the testimony of effusion. In this assemblage of facts there could be no doubt in diagnosis. The right chest was hyperresonant, and the murmur exaggerated.

I told this gentleman that his dyspnoea, his ability to lie but on one side, his faintings, and the fatigued, done-up condition which followed his office hours, were and had long been caused by the presence of a large quantity of fluid on his chest. He was astonished—incredulous! No such opinion had ever been given. I replied that such was beyond all doubt.

This, to him, strange opinion having been expressed, it was arranged that Dr. Fuller of London should meet me. He confirmed my diagnosis in each and every particular. He said to the patient's friends, "I believe there are not less than three pints of fluid in his chest; and agree with the opinion of Dr. Wardell, that fluid has been there since the spring of 1867, when he had inflammation in his side in India." Dr. Fuller advised paracentesis. I asked my colleague Mr. Rix to meet Dr. Fuller and myself. Mr. Rix introduced the trocar at the fifth interspace; no fluid escaped. Adhesion, pyogenic membrane, and lymphic deposit, doubtless prevented the liquid from being reached. Iron, quinine, cod-liver oil, and the external application of iodine, and the half-waistcoat, were ordered.

In the course of two or three weeks, his respiration was easier and the physical signs were improved. After having been under my care two months, he left Tunbridge Wells very greatly benefited, but with some fluid still unabsorbed.

On November 17th, I received a telegram to meet Sir William Jenner and the general attendant at a consultation in London. The patient fancied he was not so well. To my own astonishment, the left chest was resonant almost to the base; there were friction-sounds and coarse crepitation where before nothing could be heard; and the apex-beat was now distinct beneath the mammae. Sir William said "there had, beyond doubt, been recent and great effusion; that some small quantity of fluid still remained; but he believed it would all be absorbed". At the request of the family, he put this opinion in writing. The patient had at this date resumed his official position; he could lie on either side, and had gained flesh.

A. T.'s last note was dated February 7th, 1871. In it he said: "I have now been so long at work, and through such severe weather, without feeling worse, that I hope I am *out of the wood*. Until yesterday, I pursued the iodine treatment as prescribed by you. My doctor examined my chest a week ago. He then said he was perfectly satisfied that the fluid has now quite disappeared". This gentleman went to the West Indies to fill an official appointment; and a member of his family wrote to me some time ago, and stated that he continued well. This patient called upon me October 21st, 1874. He looked and was extremely well. I most carefully examined his chest, but could not detect a morbid sign or sound.

It may, and very properly, be asked, why it was that two hospital physicians, both occupying a distinguished position, should have overlooked the real conditions of this gentleman's case. He went to their consulting-rooms; he was an erect and muscular man, and his features did not plainly indicate the extent of disease under which he laboured. Percussion beneath the clavicles gave no dull or doubtful sound; unfortunately, they did not examine the chest posteriorly and to the base; and I believe the patient did not sufficiently impress upon them his inability to lie but on one side, and the oppression which he experienced.

CASE XII. J. F., single, a maid-servant, aged 22, a thin and an extremely pale-looking young woman, was admitted August 22nd, 1871. She had been several weeks ill, and her case was regarded as one of consumption. It was ascertained that her illness commenced by an acute inflammatory attack in the chest, which had been treated by fomentations, poultices, and other remedies. She made a partial recovery, but did not get well. Her wonted strength did not return, a feeling of breathlessness was caused by even trifling excitement, and she could not lie on her left side. On admission, the conjunctivæ were blanched; great dyspnoea was produced by going up stairs, and the features

showed that drawn anxious look, so expressive of pulmonary embarrassment. On inspection, the right chest looked bulging, and was evidently, as mensuration proved, larger than the left. The flat hand, passed over the surface of the right side, felt full and smooth. On both hands being placed simultaneously on the chest, tactile fremitus was distinct in the left, but absent in the right, thorax. The intercostal spaces were obliterated on the diseased side. Auscultation detected distant tubular breathing, unmixed with any vesicular murmur, in the one back, and puerile respirations in the other. The præcordial impulse could be but faintly felt. There was no dulness at the apices, nor yet any crepitation. The case was very clearly one of effusion. As, however, the dulness at the right back did not extend higher than the angle of the scapula, I resolved on trying the power of absorption, at least for a time. The iodine and half-waistcoat were employed. She was ordered iron and quinine, and put on extra diet, with a moderate allowance of port wine. Under this treatment she began to improve. The rotund contour of the right side became less marked, the intercostal spaces more delineated, and the air could be heard weakly nearer the base. She was discharged, November 21st, with but an insignificant amount of dulness, quite near the base, and which it was presumptive might be more owing to adhesion and organised exudation than to any remaining fluid; whilst her general appearance attested the very marked improvement which she had made.

CASE XIII. Mrs. M., married, aged 40, never had a child, was pale, haggard, and sickly-looking. On questioning her when she came to consult me (September 3rd, 1871), there was a history of acute pleurisy in the preceding March. For many weeks, she had been under homœopathic treatment, but without the slightest benefit. When I first saw her, she complained of great difficulty of breathing, accompanied by much palpitation, with a tendency to faintness on the least exertion. Inspection showed diminished mobility in the left side; the surface on this side being smooth and even, and the intercostal spaces were wide and tense. The heart's impulse was feebly but most distinctly felt to the right of the mesial line. Percussion gave that absolute, dead, dull sound, which is alone elicited when there is fluid. Altering the position of the trunk varied the line of dulness. At the lower third of the thorax, nothing could be heard except a blowing tubular breath-sound; there was over that area no vesicular breathing whatever. All the negative and positive facts told the story of effusion. The treatment was precisely the same as that adopted in the preceding case, and the patient made a speedy and full recovery. Her husband told me early in December, 1872, that she was very well.

CASE XIV. J. A., a man, aged 38, who had been a waiter in hotels, was admitted March 5th, 1872. He was sent to be put under my care by my friend Mr. Wallis of Hartfield, who had very correctly diagnosed effusion. The man confessed that he had not been the most temperate of individuals, but that latterly he had taken a less amount of stimulants. At a glance, it was evident that he laboured under some grave malady. I had received from Mr. Wallis a history of a low form of pleurisy, the symptoms of which tardily declined. On admission, he looked thin in the face, and the muscular system was a good deal reduced. On being stripped, the left shoulder was lower than the right, and the left side was full, rounded, and prominent, particularly at the middle third. His breathing was quick, the pulse a little over ninety, and exertion caused breathlessness. He could not lie on the right side, and only with discomfort on the left. The dulness ascended at the left back, quite up to the spine of the scapula. There was no dulness at this apex. The right chest was somewhat preternaturally resonant, except at the apex, where there was some dulness. The heart was pushed up under the right nipple, below which its impulse could be weakly felt. The stethoscope confirmed the opinion already formed by percussion and other facts of the case; but there was moist small crepitation of the right apex, and, though pleurisy had set up the effusive tendency, there was, it was feared, incipient tubercular mischief at the top of the right lung. The man's distress was very great, and at the end of a week after his admission, I determined on paracentesis by means of the aspirator. My colleague Mr. Marsack operated, and ninety-three ounces of a greenish straw-coloured serum were withdrawn. He had a good night after the operation, and the next day he expressed himself as being very greatly relieved, as he felt his breathing easier, and he could in fact lie on the right side. At the end of three weeks, sixty more ounces were, by the cannula, taken away. From this time, he began to gain flesh, his looks improved, and the physical signs were far more natural. The moist crepitations at the right apex disappeared. Iodine was, in the manner I have before described, applied, and he took iron and quinine, and cod-liver oil, and was allowed six ounces of port wine a-day. He left the infirmary June 11th, giving promise of a full recovery. I saw him a few weeks afterwards; he had walked three miles, and he looked wonderfully

better. On October 28th, 1873, I had again an opportunity of examining him. To my surprise, he was quite erect, without the least inclination to the left side. He had gained colour, and his face looked broader. When I desired him to strip, at a glance he had gained flesh. There was no bulging of the left side. He told me, as I was examining him, that he had taken no medicine for fifteen months, and that since February last he had been employed as a waiter at an hotel. He said he had felt no inconvenience whatever on the left side, and the fact of his having been in the employment which he described, was a sufficient proof that he could not have suffered from difficulty of breathing. I percussed him carefully. Some dulness remained in the lower half of the left chest, but it was not the absolute and characteristic dulness which denotes fluid, notwithstanding that the true pulmonary note could not be elicited. I regarded this loss of normal resonance as caused by adhesion and the organised depositions of lymph; and I shall hereafter point out how these thickenings by means of false membranes and organised deposits are sometimes considerable. The breath-sound could be faintly heard even low down. The heart occupied its proper place. There remained slight dulness at the right apex, with slight and sparsely scattered moist crepitation, and there was also a small cavity; but his gain of flesh and strength, easy breathing, his facial improvement and the physical signs, gave promise that full recovery of the left apex might eventuate, as we know that, in exceptional instances, a small cavity may become obliterated. The right lung would become less worked when it had relief afforded by the left organ resuming its functions: its chances of restoration became greater. It is quite conclusive from the case and sequents of this man, that tapping was of immense benefit, if it be not positively asserted that it saved his life.

CASE XV. J. D., a little boy, aged 5, who first came under the care of the house-surgeon November 25th, 1871. He had, prior to this date, suffered from cough and pains in the chest. These symptoms became more urgent, and the physical signs indicated an attack of pleuro-pneumonia. There was dulness at the left inferior back, accompanied with moist crepitation and subdued friction sound. He recovered from the acute attack, but did not fully regain his former health. In the beginning of July, the house-surgeon requested me to again see the child. The little patient had been for some weeks from home. When I saw him, an abscess had formed externally at the costal angle, and over the fifth, sixth, and seventh ribs, there were in marked degree all the common physical signs of thoracic effusion, and it was evident that the rounded external swelling had communicated with the cavity of the chest. An opening was made at the most prominent part of this swelling, and a probe introduced, when an aperture was distinctly felt between the sixth and seventh ribs; seven ounces of thick creamy pus were drawn off (July 26th, 1871), and with very considerable relief. He was ordered the syrup of the iodide of iron and cod-liver oil. I last saw this little boy on December 14th; a fistulous opening still existed, but there was no dulness, and the breath-sound could be heard down to the base. He was directed to lie on the left side, and thus the cavity was daily emptied. The mother told me the quantity of matter had gradually become less.

CASE XVI. I was requested, May 13th, 1872, to meet in consultation Dr. Day and Mr. Bisshopp, at Tonbridge, in the case of a young gentleman, Mr. V., aged 18, who for some time had been under the care of these gentlemen. This patient, prior to his illness, had been an unusually powerful and well-built youth, having taken seven prizes given for athletic sports at a public school. There was the history of acute pleuritic inflammation, which had been produced by a fall. At the time of my first visit, the patient was much reduced in flesh—he weighed only seven stones five pounds—was very anæmic, and looked very ill. He lay on his back, the abdomen was distended and resonant, and, on percussion and movement, it was evident that there was some effusion into the abdominal cavity. The skin was dry and harsh; pulse 90; tongue coated, and alvine dejections clay-coloured. Inspection showed the left chest to be preternaturally full and rounded; the intercostal spaces were wide and tense; the heart was displaced towards the right, and the physical signs gave unquestionable evidence of a large amount of fluid in the pleural cavity. Paracentesis by the aspirator was decided upon; Mr. Bisshopp performed the operation, and sixty ounces of greenish straw-coloured serum were withdrawn. He had a moderate dose of opium at bed-time, and he took a mixture with quinine and steel thrice daily, and a carefully selected diet was to be observed. The removal of the fluid relieved the breathing, and gave great relief. At the end of a fortnight, I was again requested to meet these gentlemen. Examination showed that the cavity still contained fluid. It was resolved to evacuate it, but not by means of the aspirator, because the use of that instrument required a greater length of time than the ordinary cannula; and, on the previous occasion, the patient was much fatigued by being so long kept in the erect position. The flattened cannula, with a piece

of gutta-percha tubing, and the free end submerged in water, was introduced at the fifth interspace at the costal angle, when a pint of what seemed to be pure bright-coloured blood freely flowed out; the sanguineous character of the fluid then changed, and another pint of reddish serosity escaped; and thus, in the two operations, one hundred ounces of fluid were taken away. I saw this young gentleman twice afterwards with Dr. Day and Mr. Bisshopp, when gradual and decided improvement was manifest. The abdomen became reduced in size, nor was there any evidence whatever of any fluid remaining in the abdominal cavity. Percussion and the stethoscope proved the marked changes which had taken place in the thorax; the dulness had greatly declined, and the breath-sound, as evinced by coarse crepitations, could be heard almost at the base. The improvement continued, and my services were not again required. On December 30th, I had an opportunity of examining this young gentleman. The change in his appearance was so great that I hardly, at the first glance, recognised him. He was then an erect, powerful, and healthy-looking young man. He could leap and run, and was full of activity. Inspection showed that he had fully regained his former volume of flesh, and, at every aspect, the chest walls seemed symmetrical. The præcordial impulse was distinct at its normal site, and the tactile fremitus natural. Careful percussion could not detect a single patch of dulness; the true pulmonary note could be elicited at any point, and auscultation discovered no morbid sound whatever, except a slight amount of large and slightly moist crepitation at the base of the left lung. He told me that ten weeks after the last operation (August 1), and when he was considered to have greatly improved and to be gaining flesh, he then only weighed nine stones ten pounds, but when I saw him (December 30th), he weighed twelve stones and a half. This case, from having been one of very grave character, might be said to have ended in full recovery. Nothing could have been more satisfactory than the result of the two operations.

CASE XVII. Mr. Manser of this town requested me, August 21, 1872, to see with him the son of a gentleman, a little boy, six years of age, who had empyema, and who had been operated upon by Mr. Manser's partner Mr. Marsack, a short time previously, when a considerable amount of seropurulent fluid was removed. When I saw the child, he looked emaciated and extremely ill. The pulse was quick, the breathing accelerated, and there was an unusual degree of nervous excitability. Examination showed the reaccumulation of a large quantity of fluid in the right side. Mr. Manser introduced the flattened cannula, and forty ounces of purulent matter were withdrawn. It was decided to keep the opening patulous, and this was done, for the time, by means of a piece of gum catheter being inserted and persistently kept *in situ*. Afterwards, a flattened silver cannular-formed tube, three-quarters of an inch long, with a button-head externally, was employed. The child every morning was turned on his side, and thus accumulation was prevented. He took the syrup of the iodide of iron and cod-liver oil, and was ordered a carefully regulated diet, and wine twice daily. I was desired to meet Mr. Manser again, December 5th. The improvement in the child was most manifest; he had gained flesh and colour, and in all respects seemed much better. The physical signs bore testimony to the more obvious indications of amendment. Inspection showed some contractions of the right thoracic parietes; comparatively little dulness remained, and this was at the base. The heart's impulse was easily felt at the normal position, and tactile fremitus was distinct at the right back. Coarse crepitation could be heard almost at the base. It was agreed to apply the iodine over nearly the entire left thoracic surface, in the proportion of one-tenth of the tincture and nine of water, and by means of the half waistcoat. Mr. Marsack and Mr. Manser had very properly recommended that he should pass the winter and spring at St. Leonard's. His future progress was most satisfactory.

CASE XVIII. The house-surgeon, Dr. Hall, desired me, in November 1871, to see with him a little boy, six years of age, then an out-patient of the infirmary. Dr. Hall had attended him for an attack of pleuro-pneumonia, the acuter symptoms of which he passed through favourably; but considerable dulness remained in the left chest. Examination left no doubt as to the existence of effusion. It was deliberated upon, whether paracentesis should not at once be performed. He was a strongly-made child, with well developed muscular system, and it was finally determined to first try the effects of absorption. The diluted application of iodine, by means of the half waistcoat, was had recourse to, and he was put on iron, quinine, and cod-liver oil, and strictly ordered to be kept warm and quiet. The dulness gradually disappeared, the air again descended into the left chest, puerile respiration returned where only distant tubular breathing had been heard, and he made a full recovery. He left Tunbridge Wells several months ago, and on making inquiries on December 14th, I was told that he was quite well.

[To be continued.]