BRITISH MEDICAL JOURNAL:

BEING THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

EDITED FOR THE ASSOCIATION BY ERNEST HART.

LONDON: SATURDAY, JANUARY 3, 1885.

CLINICAL LECTURE

PENT UP SECRECTIONS.

Delivered before the pupils of the Medical Department of the Yorkshire College, December 3rd, 1884.

By C. G. WHEELHOUSE, F.R.C.S.,
Consulting Surgeon to the General Infirmary, Leeds.

GENTLEMEN,—It has seemed well to the combined authorities of the Yorkshire College and of the General Infirmary—within whose walls it has been my privilege to work for the past twenty years—that I, together with my colleagues, Dr. Clifford Allbutt and Mr. Teale, should offer you, from time to time, in the form of clinical lectures, some portion of the experience we have gathered during those many years.

To me, gentlemen, it will be a pleasure to do this; and if, by so doing, I can add to the store you are preparing to carry from those venerable institutions out into the world, I shall deem no labour such lectures may cost me to have been labour in vain.

And to those of my fellow practitioners who honour me with their presence, I would add that, so far as I am concerned, these lectures are not intended for their instruction so much as to recall pleasant recollections of professional intercourse—as opportunities to remind us of many interesting bygone consultations, and to bring to our memories, for a few moments, such lessons as those consultations may have afforded us, for our guidance in future emergencies. If, therefore, to them, what I have to say, should, now and then, seem trite and unnecessary, I ask them to pardon the apparent presumption, and to remember that it is to younger ears that I am primarily speaking.

In the fulfilment of the ordinary physiological processes of the healthy body, and that its ordinary functions may be carried on smoothly and with regularity, certain definite laws have been established, and certain compensatory actions have been provided.

Thus: if it has been ordained that "Man shall live by the sweat of his brow," so it has been provided, also, that honest labour shall provoke repose, and that, in sleep, the wear and tear of labour shall be effaced; and, as with the whole, so with the parts of our organisation, "from labour to refreshment, and from refreshment to labour," is the order of their action, and, upon the regularity of the succession of healthy work and healthy repose depends the healthy performance of the function of each and every part.

So beautifully balanced is our organisation, that though to the inquisitive and unobservant eye it may seem only to possess the attributes of a wonderful and exquisite piece of mechanism, to him who, with reverence for Nature, seeks to penetrate further into its hidden mysteries the science of physiology shows that it is something greatly more.

Never, it is seen, is the action of the whole body, or of any of its parts, the same for many seconds together. A condition of constant change—of change which seems inscrutable—is for ever unfolding itself before the eye of the physiologist, constituting, in reality, the life of the body. At this moment, for instance, when you and I, acting and re-acting upon one another, are in a state of mental activity, the life and condition of our brains and nervous systems are one thing, and presently, when we have fallen into repose, they will be wholly another.

At one moment this "system" and its "centres" are flooded with an active stream of highly vitalised arterial blood; at another, that stream has well-nigh ceased; and as it is with the "nervous," so it is, also, with every other so-called "system" in the body:

[1253]

with the digestive organs during the ingestion of food; with those of absorption and assimilation during its imbibition and appropriation; with the muscular system in its varying conditions of activity and repose; and so with every other.

And, gentlemen, evanescent as these physiological conditions are, it scarcely needs that I should remind you that each one is accompanied by equally varying physical conditions; that, only so long as the perfect power inherent in each part to control and regulate these conditions exists, can the body, or any part of it, be spoken of as "in health."

Health consists of the even poise of the beam in every instance; and the moment the "poise" varies, even by ever so little, then come distress, disordered function, and impeded healthy action. Let the brain be overwrought, let the due proportion between labour and repose be unduly shortened, and you know how soon and how certainly the health will suffer.

Those of you who are given to the use of too much midnight oil, and to take too little rest, will appreciate what I mean, and will recognise, in the sense of weariness and inability to continue good work at its best for long together, how true the assertion is; and, as wise men to whom the well-being and bodily comfort of your fellow-creatures is, in the future, to be entrusted, you will lay every change perceived in the working of your own frames carefully to heart, that you may understand them when called upon to observe and treat them in others.

Among the various changes in the physical condition of parts and organs is the condition of what are called their "secretions" and their "excretions;" and upon the capability, or otherwise, of individual parts to deal with these, will depend many of the problems which will come before you in after-life.

As it is the province of the healthy nervous system to generate, to store, to regulate, healthy nervous force, so it is the province of the healthy pleura or pericardium to provide for the free and healthy movements of the lung and of the heart; and just as this is effected in the one case, so it is in all the others; in activity, flooded with healthy pabulum; in repose, dealing with the restoration of equilibrium, or with ejection. And herein lies the difference between the secretions and the excretions. By the one, we mean certain conditions and materials necessary to the healthy action of the part—constantly recurring, and as constantly passing away again; by the other, the final separation and ejection of materials whose future utility is destroyed, and whose retention in the body would be fatal.

Thus the pleura, the pericardium, the synovial membranes, are for ever producing, removing, and reproducing just so much "secretion" as suffices to secure the smooth action of the lung, the heart, the joints, but never, so far as we know, destroying the material out of which their secretions are elaborated.

The kidney, on the other hand, the lungs, the skin, the intestinal glands, are for ever engaged in separating that which, if retained, would tend as certainly to the destruction of the body as would so much poison introduced from without.

Over certain of the processes and proceeds of excretion we have often, fortunately, greater control than we have over those of secretion; and should any tendency arise towards failure of their ejection, or to their accumulation in the body, our power to deal with them is, in the main, much more prompt and satisfactory.

But the usual current of health does not always run thus smoothly and without friction; secretions and excretions alike may become "pent up" in the body, and, alike, may become the cause of danger, of distress, and of death, unless their evacuation can be secured.

Just as the brain may become overexcited or dulled, as the kidney may be overactive in the secretion of urine or the reverse, or the liver may pour out sometimes too much, and at others too little bile, so the evenness of the working of all organs of secretion may at times be interfered with; and, either as the result of perverted physiological action, or of organic disease, may prove too active, or the reverse, and their secretions may be either too scanty or superabundant.

If superabundant, seeing that, in the main, they are poured into closed sacs, naturally distension first, then overdistension of the sac

is the immediate result; and, unless the balance can in some way be restored, certain and definite consequences must follow.

Sometimes, nay often, I dare say, such restoration is within the reach of medicine; and very generally, even though it be beyond the aid of medicine, surgery is able to intervene, and, by a timely withdrawal of the imprisoned secretion, may be able to restore the balance; but sometimes medicine and surgery alike are powerless, and both are compelled to lay down their arms.

It may be, it sometimes is, that the consequences are neither important nor serious; thus, in the case of an overactive tunica vaginalis, beyond the discomfort arising out of the weight and size of the resulting hydrocele, no other evil consequence need be greatly feared.

In some, as in the case of the pleura, it may be that the contained viscus, though essentially vital to life, may permit a certain amount of crowding; and, if not unduly pressed, or for too long a time, may, when the pressure is removed, be restored uninjured to its pristine condition, and no permanent harm may have been done.

Thus, many simple effusions of serum into the pleura doubtless occur, are reabsorbed without causing more than temporary inconvenience, and leave no evident traces of their existence behind them; and, provided relief be obtained through the help afforded either by the physician or the surgeon, the spongy lung, uninjured in texture, will resume its normal position and functions almost as if nothing had happened, and no trace of the effusion may remain.

Let me give you a typical case. As I was driving one day past a house at some little distance from Leeds, a medical friend called me somewhat urgently into a house, to ask my opinion of a case of which he was in charge. A young gentleman of otherwise splendid health and physique, had, a few days previously, from some cause or other, been attacked with acute pleurisy, and seemed now almost at the point of suffocation. Physical examination showed the left side of the chest motionless—dull from base to apex, vocal resonance and fremitus entirely absent, with loud tubular breathing near the spine. The diagnosis was, of course, simple enough—acute pleuritic effusion, and, considering the rapidity with which it had come on, almost certainly serous. Fortunately, I had a Roberts's trocar in my bag; and with this I was able to relieve the patient without delay, and the case was one in which delay might have caused very serious consequences. I tapped at once, and drew off six pints of clear fluid, and had the satisfaction to find the chest fully resonant, and the breath-sounds normal, even before I left the house; but, though I left the patient wholly relieved for the time, I felt bound to express my fear that, probably, the effusion would be repeated; and that, instead of simple serum, we might perhaps, on the next occasion, have to deal with pus, and have an empyema on our hands.

Fortunately, this fear proved to be a needless one, for the patient made an uninterrupted recovery, and has remained ever since quite well and strong.

But, gentlemen, pent up secretions are not always thus happily disposed of. They may bring life into imminent jeopardy, and that in various ways. In some, the course of the mischief produced may be lingering and slow, and may allow ample time for thought and consideration.

Take, for instance, the case of a distended joint; a joint distended, it may be, only by its natural secretion in excess, or which, originally so distended, has passed on into suppuration, and which, by the severity of the constitutional mischief it is causing, threatens life. You see this case well-nigh every week, you see it almost every Wednesday morning submitted to "consultation," and you see how we, your teachers, have time and opportunity to consider, to weigh, and to argue, all the "pros and cons" of the case, before we finally determine what we consider to be the best line of treatment to adopt: whether to wait upon nature, to aspirate, to evacuate by direct incision, to excise, or to amputate; and the patient suffers in no way while we do so. But contrast this with a case which once happened to me and to my colleague, Dr. Allbutt.

In the dead of the night I received an urgent message from Dr. Allbutt, requesting me to come to the infirmary to his assistance in a very urgent case. I found him sitting by the bed of a dying patient; I say dying, for so certain was his death considered, that his bed was screened from the observation of the other inmates of the ward, that they might not see him die. A hasty explanation told me of a case of acute rheumatic fever, which had resisted every kind of treatment, and was now closing, apparently, in acute pericardial effusion. Medicine, said the doctor, has done what it can. Is it in the power of surgery to do more? Remembering the teaching and experience of Trousseau, we thought it not impossible. A hasty glance at the bed

showed me a patient, livid, cold, covered with a clammy perspiration, almost pulseless, eyes glazing, hair soaked with sweat, and death plainly stamped upon pinched and withered features.

I slowly but steadily thrust a small trocar and cannula along the upper margin of the fourth left rib, upwards and to the right, until I found it communicating to my hand the feeble beating of the smothering heart; withdrawing it for half an inch, I then altogether withdrew the trocar, and, leaving the cannula, had the satisfaction to see, flowing from it *per saltum*, a clear stream of fluid, and to feel the heart grow stronger and stronger as it recovered from its load. Eventually that patient also recovered; and though the operation was done in the old infirmary, he is still alive and well.

Here was a pent up secretion, which, save for the aid I was able to afford the patient, would, in a very few moments, have placed him beyond all help.

Dr. Allbutt reminded me that Trousseau, after withdrawing the fluid, had always washed out the pericardium with a weakly iodised solution; but here my natural caution came into play; and, having succeeded so far, I declined to adopt a measure which seemed fraught with danger almost as great as the original mischief, and I have never regretted that I held my hand.

Now, let me give you the outline of another case which once occurred in my practice, and which, while it interested me greatly at the time, gave me also very serious anxiety. It is a typical instance of an excretion simply mechanically "pent up," and which yet ran far towards bringing about a fatal issue.

A young lady, a member of a family of wealth and of important position, living in a mansion surrounded by its own park, and free, therefore, from the contamination of surrounding nuisances, situate in one of the healthiest and most open parts of Yorkshire, and supplied with water whose source was unexceptionable, was, nevertheless, the subject of what was supposed to be well marked and protracted blood-poisoning; constantly recurring sore-throat attacks, sometimes almost approaching diphtheria in virulence; pallor, anæmia, loss of weight and strength, occasional attacks of diarrhoea, sometimes of profuse sweating—a mixture, in fact, of irritative fever with hectic. So serious did her condition become, that her life was manifestly in danger, and yet no bodily organic disease could be anywhere detected to account for these very pronounced symptoms. The most careful examination of the chest failed to detect any mischief there; there was neither pain, nor cough, nor expectoration, nor any physical evidence of any condition which could account for them; and, so far as could be made out, all other important functions were declared to be properly, though feebly, performed.

In these days, gentlemen, of sanitary activity, the drainage of the house was not overlooked; for, as was not unnatural, drain-poisoning was suspected; and, at great expense, the whole system of the drainage and sanitary arrangements of the house was carefully, but unsuccessfully, examined.

No fault of any magnitude—none, certainly, which could bear so directly on any one member only of the family, could be detected, as to give any clue to the cause of the illness, and every one was baffled. Removal from home, sea-air, mountain-air, and every conceivable form of change was tried in turn, and failed, and hope was well-nigh extinguished.

I need not say that, in a case of such interest and such importance, every function was most thoughtfully questioned, and none more carefully so than the menstrual. But, one day, it happened that something occurred which led her usual medical attendant—a hard-headed, shrewd man—to inquire with somewhat more of circumspection than he had ever done before into this particular function. He was assured that the young lady was regularly unwell, and all that he could ascertain was that the "periods" were unusually prolonged, though the discharge was only scanty.

Examination of a diaper showed him a small amount of deeply discoloured and "fetid" discharge, and this determined him, at all risks, to propose a vaginal examination. Before this was consented to, a second opinion was demanded; and I, on hearing the attendant's account of the case, feeling strongly with him that these were conditions which must be fathomed, seconded his request, and consent was happily given.

Gentlemen, it took very few seconds, then, to solve this hitherto great mystery. The patient having been anaesthetised with ether, we found a hymen, not indeed perfect, but so nearly so, that a tiny aperture was all that existed to permit the exit of the natural excretion.

Month after month the discharge had appeared, and so had satisfied the minds of both patient and attendants, and yet, month after month, a large residuum had been retained. This, by admixture

with air, had become a fertile source of decomposition, and, by reabsorption, had kept the system in a condition of chronic drain-poisoning indeed.

On freely dividing the hymen, the vagina was found dilated into a distended sac. Its walls were granular and over-vascular, converted, indeed, into a large absorbing surface, which had been only too apt an agent of reabsorption. A free outlet was made, and a few months sufficed not only for arrest of the mischief, but for cure, complete and perfect, of all the evil consequences.

Then, gentlemen, there is another form in which "pent up" uterine secretion may meet you from time to time, and cause you the gravest and most serious anxiety, which I must not pass over without a word of comment, threatened septicæmia following labour. There are few of us who cannot call to mind cases in which, after labours apparently the most prosperous, in which on the third or fourth day, or sometimes even later, for I can call to mind one in which it happened on the fourteenth, a rigor, followed by the severest constitutional irritation, has not suddenly cast a cloud of anxiety over all our hope of well doing.

Many such have happened to me during the course of my life, and, I doubt not, have happened also to many who are honouring me with their presence to-day. Let me advise you that such cases treated simply on general principles will almost infallibly go on to a fatal termination, but which, if properly comprehended and rightly treated, may still be conducted to a favourable issue. A small amount of imprisoned uterine discharge, a few shreds of imprisoned and decomposing membranes, or a tiny lobule of retained, imprisoned, and decomposing placenta—nay, even a little gas generated by some unhealthy condition of the interior of the uterus, may be causing all the danger. These, if not set at liberty or got rid of, may suffice to bring about a fatal issue. Under such circumstances, let me advise you, with your own hand—and, need I say, with the utmost gentleness and care—to wash out the cavity, not of the vagina only, but of the uterus itself, with an antiseptic wash.

The mere dilatation of an os, closed it may be by spasm, or even by simple swelling, may permit of the escape of such, and may suffice to rescue your patient from otherwise imminent danger. I need not say that it should be your care to do this with your own hand, not trusting to the intervention of the nurse.

Skilled knowledge is required to meet the emergency, or harm rather than good may be the result. Air may be thrown into the uterine cavity instead of being let out, the uterus may be distended, and the contents of the syringe may be forced through the unclosed Fallopian tubes into the peritoneum, or into open uterine sinuses, and instant death may thus be caused. But with gentleness, and care and knowledge combined, these evils may be avoided, and then all may again go well with your patient.

Now, gentlemen, I would point to this melancholy spectacle.¹ I have had it brought from the museum of the school to show you. This was a dispensary-patient of mine, who reached the age of 12 before death released her from one of the most terrible conditions of pent up secretion I have ever seen. The aid of the physician and of the surgeon alike, in this case, proved unequal to give the faintest relief, and death, when it came in the end, came as the only solution of many and increasing difficulties.

I have not introduced the case, however, only to tell you this, but rather to tell you that, carrying the remembrance of it with me, I have been induced, and I have seen others induced, in an earlier stage of this condition of hydrocephalus, to intervene and endeavour, by the introduction of minute capillary drains (Southey's) to command the secretion, but only with disastrous effect. Convulsions, coma, and speedy death, have, so far as I have seen, been the only results of such interference; and I, at any rate, have invariably regretted it. In a form of disease somewhat allied however to this, I think modern surgery is holding out a helping hand.

I have seen my colleagues, Mr. Atkinson and Mr. Robson, each effect a distinct cure of the hitherto uncontrollable condition of spina bifida.

In Mr. Atkinson's case, the cure was effected by strangulation with the elastic ligature; in Mr. Robson's, by a more distinctly surgical proceeding. Taking from the surface of the tumour an ellipse of skin, the sides of the inner membranes of the sac were brought into apposition by fine sutures, and the superfluous portions were cut away; then, between these and the skin, a piece of recent rabbit's periosteum was inserted, in the hope that it would develop bony growth. This it failed to do, but it lived, and added firmness and strength to the cushion which eventually covered in the opening in the vertebral column, and the child recovered.

¹ A cast of an extreme case of chronic hydrocephalus.

But so far, gentlemen, notwithstanding this unhappy instance, we may flatter ourselves that, so long as we have only to deal with secretions healthy in character, though abnormal in amount, we have, in the majority of instances, means, both medical and surgical, to enable us to deal with them; but, unfortunately, they often come before us in another and much more dangerous form.

Sometimes from the beginning, at others as a sequel of effusions originally more simple in character, we may, in every one of the regions I have mentioned, and in many others, have not simply serous and healthy secretions pent up, but diseased and unhealthy ones.

Serum may be superseded by pus; simplicity may be changed for putridity, and the constitutional disturbance produced by their presence may be changed from one of simple excitement to one of violent and virulent febrile disorder.

You see so many cases of empyema treated in this institution, and treated almost invariably by free posterior incision; you see so many suppurating joints freely incised, large abscesses opened, and all alike cleansed, drained, and antiseptically dressed, that to dwell upon them would be to waste your time; but there is a class of cases to which I wish to direct your attention, and in which these conditions are exhibited, as being not only of great importance in themselves, but as opening up a field of surgery almost new.

A few years ago I was consulted, in a great emergency, by a medical practitioner of eminence in this county, in a case of supposed empyema; indeed, I was summoned for the express purpose of removing the contents of an empyema; but, when I had examined the chest, I was very doubtful whether any empyema existed at all, and I ventured to express my doubt.

I was met with the assertion that it was unquestionably so, and that the patient was even then coughing up daily large quantities of very fetid pus. I introduced an aspirator-needle into what should have been the pleural cavity without finding any pus, and I repeated the puncture in several places, always with the same negative result. Again, therefore, the chest was very carefully examined, and, at one point, in the middle lobe of the right lung, we fancied we could distinctly define a large splashy cavity. One of my exploratory punctures had been provokingly near this spot, but had evidently just missed it. I now reintroduced the needle, and, guided by the idea I had formed to what I supposed to be the diseased spot, pressed on my needle until, to my great satisfaction, I plunged manifestly into the middle of it, and withdrew from it thirty-six ounces of dreadfully offensive pus, to the delight of both patient and attendant.

But to me there was more than mere gratification in this result; there was an altogether new experience. I had no doubt whatever that I had tapped and emptied an abscess seated in the very middle of the lung. I had never heard of an abscess so placed and so treated before.

For a time, the patient did extremely well; no evil seemed to come from the operation, and the relief afforded was beyond expression.

Once afterwards I emptied the cavity in the same way; and again with the same gratifying result; and, though the patient eventually died, the case opened up to me an entirely new field of possibilities. Here was a poor sufferer who had been engaged for many weeks in the ceaseless occupation, necessary by night as well as by day, to the utter destruction of everything that could be called rest, of coughing up the fetid contents of an abscess. Why should not such an operation as the one I had performed be frequently resorted to?

In the Address in Surgery which I had the honour to deliver before the members of the British Medical Association, in 1878, at the annual meeting at Bath, I propounded this question; and, for, I believe, the first time, directed professional attention to the subject. Since that time, I have heard of a few cases in which the same practice has been adopted, and I can personally point to two in which it has been followed by success. In lectures such as these I can only, in the main, draw upon my experience for cases illustrative of any opinions I may advance. I cannot show you the actual cases themselves, as your systematic surgical teachers are able to do, but I doubt not that, at some period during your pupilage, you will see this question discussed; and it may even be that, in years to come, you may live to see the practice received and acted on as a recognised method of treatment.

Let me give you in detail one of my own cases, the notes of which are before me. I was requested by a surgeon in this town to see a patient with him, about whose recovery he expressed himself as hopeless, as he considered her far advanced in phthisis, and beyond the reach of any save very temporary relief. Cough, emaciation, profuse fetid expectoration, overwhelming perspiration whenever she slept even for a few moments, were her chief symptoms; but the characteristic feature of her case was the fetid expectoration which she was

ceaselessly engaged in coughing up. Day and night it neither was mitigated nor abated, and even death was spoken of as a longed-for release.

In this case, too, I found a great splashy cavity at the back of the left lung; and, on placing the ear over it, the voice was transmitted directly into it as if through a trumpet. There was ground for imagining that this was an abscess which had burst into the pleura, and that I had a compound empyema to deal with. I opened and drained as if for empyema, and with perfect success, for not only was the suffering of the patient relieved, but after a time she left the Infirmary, apparently recovered, and came many times afterwards to report herself as fairly well.

The other case I desire to quote is one recorded by my colleague, Mr. Teale, in the *Lancet* of July 5th last. In this case, as in the last, the patient, supposed to be suffering from pleuritic effusion, was found to be, in reality, the subject of abscess in the lung, which, after much consultation between many medical men, was antiseptically incised and drained, and from which the patient eventually recovered.

The following is Mr. Teale's published description of the case.

On March 1st, I was requested to visit Mr. B., aged 54, in consultation with Mr. Ireland of Tadcaster. The patient had been ill for three months, and had been seen occasionally by the late Dr. Shann of York, Dr. Clifford Allbutt of Leeds, and Dr. Myrtle of Harrogate. The earlier history of the case had been most obscure, commencing in December, 1880, with a cold, shivering, loss of flesh, vomiting and retching, and pain in the hepatic region, but there was no cough, nor any symptom of lung-disease. Dr. Allbutt, in the middle of February, found hepatic dulness increasing upwards, as if there were fluid in the lower part of the thorax; and a week later (February 28th), Dr. Myrtle saw the patient; and, finding dulness occupying the lower half of the right lung, came to the conclusion that fluid was present, and advised early tapping.

On March 1st, after examining the chest, I came to the same conclusion as the other medical men; namely, that there was fluid in the pleural cavity.

The right side of the chest having been punctured, low down, with the small trocar of Bartleet's aspirator, a few drops of clear straw-coloured fluid escaped; and, even after the addition of the suction of the aspirator, only two drachms of fluid were obtained. Being still confident that fluid was present, I made a fresh puncture higher up, when very offensive, thin, greenish pus appeared, but only in drops. By applying the aspirator, more pus was obtained; and, after careful and continuous aspiration, about a pint of pus was slowly withdrawn. My view at the time was that there were two separate collections of fluid in the pleural cavity, shut off by adhesion from one another.

In consequence of the unexpected character of the case, two days later a consultation was held with Dr. Allbutt, Dr. Myrtle, and Mr. Ireland; and it was decided that, as soon as the temporary relief given by the tapping had passed by, the thorax should be opened and drained.

On the 16th, the patient had become more hectic, had expectorated for two days most offensive pus, and was, altogether, extremely ill.

Operation.—An exploring trocar was introduced at a point a little below and in front of the angle of the scapula (ninth intercostal space), and a syringe of fetid pus was withdrawn. The patient having been cautiously put under ether by Mr. Hartley, I made, with the assistance of Mr. Ireland, an incision at the site of the puncture, and opened the pleural cavity. No pus appeared—only a small quantity of serum. The finger, introduced into the pleural sac, discovered the lung, but no large space. The adjacent pleural surfaces were rough, and numerous adhesions were broken down easily by the finger passing in all directions. The lung felt dense and boggy, not crepitant and elastic. On reintroducing the trocar, and puncturing the lung, pus appeared. The puncture was enlarged so as to admit the finger, and two pints of most fetid pus escaped, rendering the room almost unbearable. A large drainage-tube, about six inches long, having been introduced, the cavity was syringed out with a weak solution of carbolic acid, and the chest was encased in carbolised tow, etc.

Before Christmas—that is, within a year of the commencement of his illness, and within nine months of the incision into the lung—the patient had resumed his active work.

Since writing the above, I have read with infinite pleasure the address of Sir Spencer Wells, delivered at the opening of the Midland Medical Society at Birmingham on November 5th last; and I cannot refrain from quoting one passage in it, at least, which bears directly on this subject, and which runs as follows.

"If I were reviewing modern surgery in general, and not limiting myself to the influence upon it of the revival of ovariotomy, I should

speak hopefully of pulmonary surgery, of the draining of cavities in the lungs, of incising gangrenous lung, of resection of portions of ribs to obtain contraction and closure of the pleural cavity; and of excision of parts of the lungs, or of an entire lung; even of the surgical treatment of purulent pericarditis. But these are subjects to which I can barely allude as proofs that we do not yet know how far we may go with rational surgery, or what may be in store hereafter for surgical enterprise."

Thus I have described to you cases in which secretions "pent up" in connection with the most important organs of the body, in the pericardium, in the pleura, in the lung, in the cavity of the uterus, have been successfully relieved by surgical interference, and to add similar histories in connection with brain, liver, kidney, and other important organs would be only too easy, but I will not waste your time by mere repetition. If I had notes of it, I should have been pleased to have mentioned one other, in which, in consultation with Mr. Scatgerood, I withdrew a large quantity of pus by the aspirator from the mediastinum of the chest; but as I have them not, I will refrain. I wish to draw a practical lesson from such cases, and to place you in the possession of knowledge which shall be of real practical service to you in your after life.

When I was your age, such things as these were unheard of and undreamed of; now, they rest on substantial ground, and to you, I doubt not, it will be given, if life be spared to you, to carry them still further, and to achieve still greater triumphs. When I was your age he would have been a bold man who would have ventured, unless in presence of destructive disease, to make a direct and free incision into the knee-joint, whereas now we do so—shall I say with impunity? well, almost with impunity, and certainly without much fear; but I have known death follow the simple removal of a loose cartilage from the knee-joint, and I have known many limbs amputated through the thigh for injury to the knee-joint, which we should never think of condemning now, and all this is the result of one only of the many great discoveries of our age.

Have you noted how often, in speaking of the foregoing lung-cases, I have spoken of the "fetid" discharges, and of "fetid" pus?

Have you noticed that "fetor" was the distinguishing characteristic of the menstrual discharge in the first case, and has it struck you that in all the admission of air to the pent-up fluid was direct?

To us, in former days, here lay the great secret; we were well aware of that; and hence the carefully precise instructions that were given, to admonish us to keep out the air from all our wounds, our explorations, our burns and scalds, and so forth; subcutaneous incisions; valvular openings, tunnelling into abscesses—anything, everything, to keep out the air!

In all this, the first faint glimmerings of the dawn of better things may now be perceived; and, taken in combination with the fact that, having steadily fought the battle of the various dressings for wounds; the old and filthy poultices and cerates, under the influence of which I, when a dresser, have seen hundreds of maggots collect in twenty-four hours in an amputation-wound; the carefully neat, elaborate, painful, and baneful dressing by tight plaster; the much-vaunted "water-dressings," and "dry-dressings," and "healing under scabs," we found men, like Spencer Wells, seeking to protect wounds, alike from the decomposition of the exudations on the one hand, and of the air on the other, by covering them with "pads of calcined oyster-shells and oil of tar," with thick layers of cotton-wool, and so on, you may be sure that we were running with a fine scent, and were pretty certain to "find" in the end!

It was, indeed, often noted that air, if closely filtered, might pass into the cellular tissue of the body without doing more than simply temporary harm, as in the case of fractured ribs with penetration of the lung, in which air so filtered by passing through the air-cells, though actually distending the areolar tissue to the point of disfiguring the body beyond recognition, was nevertheless speedily re-absorbed, if not evacuated, and did no real harm.

But to none of us, until Sir Joseph Lister arose, and drew aside the curtain from our ignorance, and showed us how the air we breathe, and which penetrates into the most hidden and secret recesses of our bodies, is laden with microscopic life and with germs, ready, the moment they alight upon a cultivable soil, to spring into life, and run riot in our wounds, our "pent up" secretions, was the revelation made that, to "sterilise" that air, was the only way in which septic mischief could be prevented, and surgery be rendered harmless.

Towards this now attainable end, we of the nineteenth century have only advanced a certain distance on the way; but, to some of you, it may be given to see the full fruition of our hope, and may you, gentlemen, bear your share in the good work.