A LECTURE ON THE SURGICAL TREATMENT OF DISEASES OF THE CHEST.

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GENTLEMEN,—I take it for granted that the course of post-graduate lectures, which I have the honour to inaugurate this afternoon, has been instituted with a threefold object.

1. That you, though you are debarred by the exigencies and occupations of a busy life from the continuance of active study, may yet be enabled to keep abreast of the medical science of the day;

2. That we, who enjoy opportunities greater than the average, who see more of the actual advances made in professional work than is possible to you in your more isolated practices, may enjoy the privilege of sharing our gifts with you; and

3. To increase, by diffusion of the knowledge so obtained, the advantages that must necessarily accrue to the public from the presence in their midst of a magnificent hospital such as this, which is maintained by their benevolence, and in which it is our privilege to work.

At any rate, I know that such were the objects with which the course, addressed in the main to advanced students and junior practitioners, which immediately preceded the present one, and of which it is the outcome, was instituted; and to those who took an active part in the conduct of that course, as I did, it is gratifying to find that our labour has not been entirely thrown away, as we at one time feared it had, and to see the seed which we then planted eventually taking root, spreading out into a healthy growth, and promising to bear good fruit after all.

But, gentlemen, a very important step, and one out of which, indirectly, our present action has grown, was the institution, now several years ago, of our West Riding Medico-Chirurgical Society, where, on a common platform, and as mutual friends and fellow-labourers engaged in the prosecution of similar work, we could meet together and could freely discuss among ourselves all that we had seen or heard of change or advance, of improvement or of fallacy; and so, by constant interchange of opinion and friendly argument, could all, in the ways most congenial to each, take our part in the ploughing, the sowing, the reaping, and the storing of the fruit of the great field in which we labour.

In two of the lectures which I prepared for the former course, I endeavoured to set before my hearers the advances which I, in my time, had seen take place in the surgery of the abdomen.

How, finding the peritoneum sacred ground, and the diseases of the organs involved within its folds inaccessible to the surgeon, I have lived to see all such ideas superseded and set aside, and every abdominal and pelvic viscera rendered amenable to the laws of surgery; and in the hour which you have now kindly placed at my disposal, I desire to make a similar review, and, in like manner, to call to mind the changes that I have seen in thoracic surgery.

I will not occupy your time by any preliminary discussion of the advantages we have derived from anæsthetics, antiseptics, and the instruments of precision by which we are placed at advantage over our predecessors. I will take it that these are all present to your minds, and that we are all ready to admit that, without them, our sphere of action would be almost as limited as was that of our fathers, and that it is these aids, primarily, that have placed us in a position to advance upon what seemed justifiable to them.

Venesection in Sthenic Inflammations.—In one thing, however, whether as physicians or surgeons, I think they were in advance of the practice of the present day.

I know that the difference is set down to what is called the "change of type in disease," and I know that, in many ways, diseases have undergone great change, both in their mode of attack and of development, and, I fear, of termination also; but I yet venture to think that we moderns, in some cases at least, miss our way in our early treatment of such diseases as sthenic pleurisy, pneumonia, or acute pleuropneumonia, where one good bleeding would often suffice, at the

commencement, to give us command over the whole remaining course of the attack, and would often cure it altogether.

Many are the cases that I can call to mind as seen in my early days, in which a patient, gasping for breath, with flushed yet livid countenance, motionless ribs, the side held as in a vice by pain, and a hard incompressible pulse, beating at 120—we had no "clinical thermometers" then—at once restored to comfort and rest, and refreshing sleep, by one good bleeding and, it may be, the application of a few leeches afterwards.

This, even within my recollection, was common practice, and practice as successful as it was common; but in these days it is rarely seen, and I for one regret its loss. I grant you I have seen the practice overdone, and, by the frequent repetition of what may well be called a heroic measure, I have seen the last state of a patient made worse than the first; but, in these days of moderation, of temperance in all things, and of sound physiological knowledge, we may, surely, learn how to accept the useful without being tempted into the dangerous portions of ancient practice. I commend the matter to your serious consideration.

Pleuritic Effusions.—To this kind of treatment, by which disease was often rather prevented than cured, may, I think, be attributed the less frequent occurrence in former times of pleuritic effusions of all kinds than we see at present.

The vessels unloaded by the practitioner then, now, in the end, unload themselves; and, finding a ready receptacle for their contents in the pleural cavity, pour into that their liquid overload, and so relieve their general tension; and, if the serous effusion thus produced be speedily removed by tapping, and by tapping at the proper spot, all will probably go well; but, if time be lost, and the struggle and tension be continued, we know how readily a simple serous effusion may be converted into an empyema, and how different a line of treatment may then become necessary.

In the first lecture that I gave in the old post-graduate course, which I entitled "Pent-up Secretions," I illustrated this point by the details of a very striking case, in which, on the spur of the moment, and without either time or opportunity for any preparation, I relieved a loaded pleura of no fewer than six pints of serum, which was never reproduced, was not followed by purulent effusion, nor productive of any after-consequences of any kind; and the whole of which success I attribute to two points—namely: 1, the immediate withdrawal of the fluid; and 2, the point at which it was withdrawn.

Had the fluid, already accumulated to the quantity of 136 ounces by measurement, been permitted to remain, the lung, in the first place, would probably have been so crushed against the vertebral column that it would have lost much of its resiliency and its power of expansion; the chest wall also would, by paralysis of its muscles, have been hampered in its movements; and without these two forces to aid me, it would have been difficult to withdraw all the fluid, and that which would have been, of necessity, left behind would probably have decomposed, and thus have become the cause of further mischief in the form of empyema.

All this, I hold, was avoided by early and immediate operation. But, if the operation had been performed as I was taught to perform it in former days, and in the manner you will find described in most textbooks of other than comparatively modern date, I do not think I should have succeeded as I did. I was taught that the puncture must be made on the upper margin of the sixth rib, a little, that is, below the point at which the apex-beat of the heart is felt, and a little external to that point; at a spot, in fact, at which an empyema, if left to itself, in a large majority of cases, will "point," and which had, therefore, I suppose, come to be regarded as the "natural" place of puncture.

Now I am bound to advise you not to select this, but a much more favourable position. If your object were only to reach the fluid, I dare say you would find it easier to do it at this than at any other place; but, as that is only one, and a very minor one of several objects, I think I can point you to a better.

Your chief care, of course, will be to make such an outlet as will enable you to drain away the last possible drop of the effused fluid, and you will only need to look for one moment at a side view of the chest to see that it would not be possible to do this from the place indicated. What is required is an outlet at the very lowest and most dependent spot attainable, and that when the chest is in an easy and recumbent position.

With the body so placed, the position indicated would be rather at the upper than at the lower surface of the exudation; and, while sufficing to draw off some, would, almost of necessity, also leave some of the fluid behind; whereas, if the form of the chest and the position of its contents be considered, it will be seen that the space between

the eighth and ninth ribs—that is, the eighth interspace—will, on the whole, best lend itself to the attainment of your object, and best permit of the lodgment of a good drainage tube in the most advantageous position.

Mr. Norman Porritt, in his prize essay on "Intra-Thoracic Effusions," has very aptly laid down a rule by which the position at which the puncture or incision for chest drainage may best be located. His direction is this: "Place the arm and elbow at the side, and mark the spot at which the lower angle of the scapula rests upon the chest; then, place the forearm over the head, and again mark the spot on which the lower angle now rests; draw a line from one of these marks to the other; and then, from the centre of that line, drop another perpendicularly downwards for an inch, and its end will fall on the eighth intercostal space, where the interval between the eighth and ninth ribs is the widest and the parts are least covered by muscles." And I would add this further advice, in cases where you are incising, not puncturing the chest merely: If, in any given case of incision at this point, the finger, introduced through the wound, leads you to think that you would more perfectly reach the floor of the pleural cavity by carrying your incision through the wall one space lower still, do not hesitate for a moment to make a second incision at that point. The one first made will heal directly under antiseptic dressings, and will in no way complicate the after-treatment.

I generally drop a line perpendicularly from the angle of the scapula in the first position, and make my puncture or incision in the interspace which I find about one inch below that angle. At this point I have never experienced any difficulty in inserting a trocar, nor have I, in any single instance, had the misfortune to do any harm.

After fair trial of many and varying instruments, I still prefer Roberts's trocar to any other; and, as a receptacle for the fluid, an ordinary decanter, such as may be found in any bed or dressing room. In the bottom of this I place a few ounces of solution of carbolic acid, just enough to cover the end of my evacuating-tube, and thereby with certainty prevent the admission of any air into the pleural cavity. And, in order that I may make my patient perfectly safe from such accident, I adopt just one other precaution. I arm my trocar by passing it through a pad of antiseptic wool, which, when the chest has been entered, may be pressed down around the instrument, and should any air, by any miraculous chance, be admitted by the side of the trocar, will serve to filter it and render it aseptic.

In this very simple way, and by means which anyone, even the most timid, may unhesitatingly adopt without help, without an anæsthetic, and immediately on its discovery, a serous effusion may be withdrawn from the pleura, and all the risks attendant upon further accumulation, for the time at any rate, may be prevented.

Intra-Pericardial Effusion.—And, gentlemen, not from the pleura only. The pericardium, when distended with fluid, is as accessible as the pleura; and I am able to look back upon two cases in which, in the presence of imminent death from suffocation, I have in an exactly similar manner tapped the pericardium, and have so restored dying patients to life. And I am by no means the only one to whom it has been permitted to do this. Since the publication of my first case, I have read of several such—some successful, others not; and I would urge you strongly, when you have reason to believe that a patient is about to die, or, is even in danger of dying, from dropsical effusion into the pericardium, to lay aside all dependence upon medicine, and to tap that sac, just as you would the pleura, without fear or hesitation.

Necessarily, the anatomical relations of the parts must be carefully considered; and that, not only as we know them to exist in health, but also as we believe them to be relatively altered by the disease. Considering the fixity of the cardiac base and the mobility of its apex, we may fairly calculate that, when the cavity of the pericardium is distended with fluid, the apex of the heart will be both elevated and tilted forward—a change by which the auricle, its most vulnerable part, and whose tender walls might easily be pierced by a trocar, will be moved out of the way, and the more impenetrable wall of the ventricle be presented to its track.

In my cases, after carefully mapping out the area of cardiac dulness, and ascertaining the point of apex-beat, I have inserted the trocar on the upper surface of the fourth rib to the left of the sternum, and advancing it steadily upwards and from left to right until the impulse of the heart could be felt, I have then withdrawn it, leaving the cannula in position, and have succeeded in emptying the cavity so far, at any rate, as to restore the power of normal movement to the heart; to enable it to resume something like control over the circulation, and to restore to the patient the power once more to fill the lungs with air. In the performance of this operation, I do not claim any originality. Trousseau recommended and practised it years ago, and Dr. Clifford

Allbutt, I believe, received the teaching of paracentesis pericardii from the lips of that great teacher himself; and, in introducing the practice here, I only acted as Dr. Allbutt's right hand; but, in two points, I desire to urge upon you the advisability of modifying the teaching of Trousseau. The aspirator was not known at the time of which I am speaking, and Trousseau recommended free incision, and the washing out of the emptied pericardium with an iodised or other irritant fluid; let me advise you to be content with simple aspiration, repeated if need be, but to abandon the iodised washing, which I believe to be both unnecessary and capable of doing harm.

Empyema.—But, you may reasonably ask, how, in any given case of unquestionable pleuritic effusion, can we be assured that the case is of this simple character? What is there to guide us to a differential diagnosis as between serous and purulent effusion?

The physician will tell you that the diagnostic symptoms are neither few nor difficult of recognition. He will point to high fever, great constitutional irritation, rigors, hectic, and so on; and indeed, in practice, we have not, generally, any great difficulty in differentiating the two cases; but, with the simple physical aid of the exploring syringe at hand, we never need remain many minutes in doubt. An exploring syringe, such as that which I show you, nay, even an ordinary hypodermic one, will clear the point up in a moment, and will determine for you what your course of action should be—whether that of simple paracentesis, or the somewhat more serious one of permanent drainage.

I call to mind several cases in which, when the aspirator was a novelty, I trusted to the use of that instrument alone, but I am unable to recall a single one in which a decided collection of pus was cured by its unaided use; and I urge you, when once you have satisfied yourselves that you have an empyema to deal with, to cast aside all syringes, whether simple or combined with aspiration, and as after-auxiliaries, and to resort, without hesitation or waste of valuable time, to free evacuation and continued drainage so long as anything will drain away.

The operation is, ordinarily, a very simple one, and one which, if not unduly delayed, may generally be relied upon to effect an ultimate cure; but to do this, it must be done promptly and before time has been allowed for secondary and more pernicious consequences to have been developed as sequelæ of the original inflammation.

Do not forget that, day by day, the pleura will become thicker and thicker; that, tied down here and there with inflammatory products, it may lead to the subdivision of one original cavity into several, and so produce encysted empyemata; that, in seeking for itself an external outlet, it may do irreparable mischief; that it may, nay probably will, make an unfortunate exit for itself if it penetrate the chest walls, or, more unfortunately still, that it may find an outlet through the lung, to the great injury of that organ; that the lung will, day by day, suffer more and more from compression; that it will gradually lose its elasticity and its power of expansion; that it will become tied and bound down by inflammatory products in its new position until, even though the pleura be eventually emptied and cleared, it cannot be restored as a useful organ; and that thus much of the benefit which an early operation might have conferred will have been lost, and no real good have been effected in its place.

Once satisfied that you have an empyema to deal with, operate early, operate freely, and in the one only manner that can be thoroughly efficient; and that manner, free incision by a posterior opening, and in the position I have already advised for puncture or aspiration, and free and persistent drainage as long as there is anything to drain.

But, again, I find myself describing a perfectly simple and straightforward case, and all empyemata are by no means such.

Thus (1) the collection may be a small one, and may be so environed by plastic effusion, that it may really be an intra-pleural abscess whose location may be undefined, and very difficult to ascertain; (2) it may be that the case is multiple in nature; (3) it may be complicated by conditions of the lung or pleura which make it very difficult to attack or cure; or (4) it may be that, in consequence of previous conditions, the chest-walls have so fallen in as to make an entrance into the cavity difficult; and each of these peculiarities must be met by special precautions and especial care.

The position of a localised empyema can only be detected by very careful auscultation and percussion, aided by the unsparing use of the exploring syringe. Multiple collections may require repeated operations, and the case of difficulty of entrance between the ribs can only be overcome by the excision of a portion of one or more of those bones.

Personally, I have never been driven to this expedient, but there are surgeons who invariably resort to it; who regard it as essential to perfect drainage; and who believe, moreover, that it facilitates the

after falling-in of the chest-walls, and so compensates the want of perfect expansion of the lung, which they believe takes place very rarely, and only under the happiest and most perfect conditions.

But, if you should be driven to it, it does not add very greatly either to the difficulty or to the seriousness of the operation. It is advisable, if possible, to preserve the periosteum, and this, with the aid of a well selected instrument, it is not difficult to do. With the instrument that I show you, my own special elevator, it is, practically, a very simple thing to do.

Lay open the periosteum along the length of the portion of rib to be removed; then, with the elevator peel it off from the bone, divide this with bone-pliers at either end, and the piece to be removed will shell out without difficulty, and will enable you to make a free entrance into the pleural cavity, without so much as injuring the intercostal vessels, which remain in the membrane, and are easily pushed aside before the advancing finger.

In one or other of these ways you will find it possible to deal successfully with most empyemata, only, I would have you remember, the earlier the disease is attacked, the greater probably will be your success in treating it, and the more perfect will the result of your treatment be.

Abscess elsewhere than in the Pleura.—It may be that the collection of matter with which you have to deal may not be truly an empyema at all. It may have formed in other portions of the chest.

I have met with abscesses in the substance of the lung, which I have opened, cleared, and cured.

I have met with them in the cellular tissue, between the base of the lung and the diaphragm; and I have also had to deal with them in the mediastinal spaces; and, in every one of these instances, I have had the good fortune to be successful in the treatment and cure of my cases. Let me relate one or two.

On October 18th, 1885, I was summoned to Apperley Bridge to see the son of a gentleman who was said to be very dangerously ill, and whose condition was an obscure one. The case was in the hands of Mr. Cautley Dawson, who had made a request for further help and advice.

I found a boy of 7 in a state of high constitutional fever, with flushed countenance, high temperature (104°), hard, quick, bounding pulse, with persistent and great pain in the right side, partly over the base of the right lung, and spreading downwards over the region of the liver; the breathing was short, shallow, and gasping, and a well defined space over the base of the right lung was dull to percussion, and painful on manipulation. At the same time there was slight jaundice; the abdominal movements of respiration were restricted; there was a feeling of constant nausea; and occasional attempts at vomiting.

The history was a mixed one. The boy had been present at a big feast, and had, on his own admission, eaten as much as he could; and in returning home after it, had encountered bad weather, and had got both wet and chilled.

My diagnosis, in the first instance, was "diaphragmatic peritonitis," but with possible implication of both diaphragm itself and pleura on its upper surface also; and, beyond free local fomentation and poulticing, emptying the alimentary canal, and allaying gastric distress, nothing was done that day.

On the next, the occurrence of rigors, a decided advance upwards of the thoracic dullness, and increase of all the thoracic, with diminution of the abdominal, symptoms, led me to suspect suppuration between the base of the lung and the diaphragm. This, my "Bartleet's" syringe proved to be a correct diagnosis; for, with it, I explored, found matter, and withdrew a syringeful of thin, watery pus. On this indication, I made a free opening; introduced a drainage-tube; evacuated some eight or more ounces of pus, and felt well content with my success.

For many days the discharge continued abundant; then it began gradually to abate; and when it seemed to have ceased altogether, Mr. Dawson withdrew the drainage tube, and permitted the wound to close.

Simultaneously, however, with his doing this, the symptoms all returned, and he was glad to re-open the wound with a director, and to re-insert the tube. But, day by day, he now found it extruded into the dressings, and experienced greater difficulty each day in replacing it; and, at last, being unable to retain it at all effectually, he requested that I might be sent for to see the case again.

I re-opened the wound with the knife; broke down some opposing exudation with my finger; and, with some little force, replaced the tube. But the symptoms remained unrelieved; the refractory tube was again, on the following morning, found expelled into the dressings, and as there seemed every probability that the boy was going to die, I was sent for a third time.

I now found it impossible to insert my finger through the wound into the chest; the ribs had fallen together so closely as to make it impossible to do so; but, so certain was I of the existence of some further collection, that I determined to remove as much rib as should be necessary for free exploration, and then to try if I could find it.

We went downstairs, and were actually engaged in selecting the instruments with which to do this, when the father came into the room with a chamber utensil in his hand, and, apologising for his intrusion, said: "See, since you left the room and came downstairs, he has had a very queer motion; is it of any importance?" and you may imagine our surprise and satisfaction when we saw that vessel half-full of well-formed laudable pus. From that moment we had an uninterrupted recovery, and never another symptom of distress.

Was the original diagnosis correct? Had we both supra- and infra-diaphragmatic inflammation to deal with? And, whilst I had relieved the chest, had the abdominal abscess been progressing; and was it that which finally found an exit through the colon? Seen in the light of after events, I believe that to have been the true explanation of the case.

A second case of somewhat the same kind I attended last year with Mr. Price, of this town. Our patient was a man in middle life, who, at the time I first saw him, was suffering from great pain over the base of the right lung, accompanied by high fever, much cough, and expectoration, occasional vomiting, and slight jaundice. He had also great pain and some fulness in the hepatic region, and, presently, we found him expectorating a considerable quantity of bile, in mixture with what we regarded as the contents of a pulmonary abscess. We were, of course, led to this diagnosis by the physical evidences that were present in extensive dullness, coarse bronchial rales, and loud splashing which accompanied his cough. The quantity of matter brought up by expectoration was something enormous, its odour overpowering, and, occasionally, it gave us almost the idea of its being stercoraceous.

Under these circumstances, we scarcely thought of seeking the abscess by perforation of the chest, but rather confined our efforts and our treatment to more simple means, when, as in the last case, though not quite so suddenly, the patient was seized with periodical attacks of purging; the contents of the thoracic abscess made their appearance with the evacuations, and from that time, in this case also, as in the last, improvement began, and, after a long and tedious convalescence, the patient made a good recovery, and is now fully restored to average health.

Mediastinal Abscess.—One other case in connection with this series I shall ask your patience for while I relate it. It is much to the point, and at the time of its occurrence was full of interest. I saw it in consultation with Mr. Scattergood, and I have his permission to make it public.

A powerful and athletic young man, an office clerk, engaged in a "scrimmage" in a foot-ball match, fell heavily to the ground, and in his fall was accompanied and crushed by several of his companions. He felt a good deal bruised, and, before many days were passed, was compelled to acknowledge, though he could not say exactly where or how, that he had been, somewhere, seriously hurt. He became restless, feverish, and ill, was unable to sleep, lost his appetite and strength, and was at last compelled to take to his bed. There, the following symptoms were developed, and, after being present for some days, as they failed to yield to treatment, I was asked to see him with Mr. Scattergood.

I found him in bed, looking careworn and ill. He complained of pain in the chest, which was difficult to localise; was tender over the epigastric region on pressure or palpation; had a small and rapid pulse, and at times became hectic and very feverish; attempts at deglutition were painful, and all food, whether liquid or otherwise, gave him great pain as it passed along the œsophagus, and especially as it entered the stomach. He was quite conscious of the locality of greatest pain, and invariably described it as "just as the food gets into the stomach." At the same time the stethoscope revealed distinct crepitation over the base of each lung, and some pericardial friction; and I set the matter down in my own mind as a somewhat general bruising of the internal parts about the lower section of the middle mediastinum.

Matters continued in this position for some time, a considerable amount of doubt and anxiety hanging over the case; but eventually it became manifest that we had something more than mere bruising to contend with, for the constitutional irritation increased, fever ran high, the hectic flushings were more marked, and rigors came on. This led, of course, to repeated and anxious consultations and examinations; and at last both Mr. Scattergood and I became conscious, or believed that we were conscious, of a feeling of bulging under the

xyphoid cartilage, of increased tension at that part, and we could see that increased suffering was produced at each examination. These symptoms, taken in combination with all that had gone before, seemed to point clearly to a deep-seated abscess; and we determined, notwithstanding the risk, to which we could not shut our eyes, to make an exploration in search of it.

With nothing to guide us beyond the general feeling of induration, a long aspirator trocar was passed into the epigastrium, and pressed steadily forward with the utmost caution; and at last, when it had well nigh reached its shoulder, and an ominous amount of pulsation had been communicated to the whole instrument, we were rewarded by the appearance in the cannula of pus, and, by the help of the aspirator, we were enabled to withdraw a large basinful. This evacuation gave, of course, great relief, but it was not permanent; the operation needed repetition, and it seemed not unlikely that the collection would continue until some perfect and continuous exit should be provided, and, after the second aspiration, we felt that we might safely enlarge the opening made by the needle, and this was done; a drainage tube was inserted, and the cavity regularly washed out with carbolic water. The patient soon after this was free from acute symptoms of every kind, but the cavity did not entirely close until six months after the original accident; nor would it have done so then, had not a permanent outlet been provided for the matter, and the cavity been carefully drained so long as anything remained. Eventually, however, it did close, and the patient is alive and well to-day, nine years after the occurrence.

Abscess in the Lung.—Of the propriety of dealing, by surgical means, with collections of matter in the substance of the lung, I have now no doubt. A few years ago, this question was agitating the surgical mind; and, in speaking of it, I expressed my belief that the practice would presently become common, and would receive authoritative surgical sanction.

I ventured, in a former post-graduate course, to describe a few cases that had come under my own personal observation, and I had the permission of my colleagues to mention some that had fallen under theirs, and especially to draw attention to a very successful one that had, then but recently, passed through the hands of Mr. Teale.

Has the time now come of which I then ventured to speak thus hopefully? I think it has, and that few surgeons much engaged in operative work would hesitate to recommend the incision, cleansing, and clearing of such cavities.

Such as are of traumatic origin; such as are the immediate results of acute inflammatory conditions; and in which, up to the time of seizure, the health and constitutional condition of the patient have been good, ought clearly to be so dealt with.

But the question is still an open one, whether it would be wise, I do not say justifiable, for on that head I have not a moment's doubt, to deal largely after this fashion with chronic abscesses, phthisical cavities, or other large collections of pus in the lungs of patients who have long been the subjects of disease, and whose constitutional strength is so far undermined that, practically, their days are already numbered.

In such cases, the objections would probably come rather from the patient's than from the surgeon's side of the question; and he or she who appreciated the fact that the relief to be obtained was only palliative, and could not cure, would seldom, I think, as yet at any rate, accept the alternative. But that the possibility of relief by operation, where the locality of the collection can with any certainty be defined, should be offered them, I have no doubt, and great would be the suffering that might often be thus mitigated.

Picture to yourselves that most distressing—as, unhappily, only too common—condition, the final stage of chronic phthisis. See your worn and attenuated patient, longing for sleep, tossing restlessly from position to position, struggling incessantly with a cough which sates rest and repose perpetually at defiance; which is yet the only means of preventing suffocation, and which, by clearing the lung, however imperfectly, of its load of accumulated excretion, gives the only relief attainable. See the reeking, transparent skin; the saturated hair; and the piteous expression of weariness and utter exhaustion depicted on the countenance, and say whether such relief as might be obtained from an outlet through which all this horrible corruption might be extruded, the fierceness of the struggle be diminished, and sleep be rendered attainable, might not be worth the additional risk of even a somewhat serious operation. I do not like to repeat myself, but this picture is not an imaginary one; it is drawn from Nature; it is one of my own cases, described in a former lecture, and which, after submitting to operation, made a real recovery, and was restored to useful life.

Not that this could often be hoped for; but, surely, it is a means of

relief which might be laid before the patient, to be by him accepted or rejected as he deemed best.

Acute and Gangrenous Inflammation.—And, to those who have seen (happily I hope but few of us have seen) those cases of acute and fierce inflammation of the lung which end rapidly in gangrene, the possibility of good to be done will, probably, present itself here also. I can call to mind one such which occurred in my own practice many years ago, in which, should it occur again, I should feel perfectly justified in resorting to surgical measures. A free incision, the removal of so much of a rib or ribs as would give space for free evacuation; and the excision, or encouragement of the separation and natural extrusion of the gangrenous tissue, and even the anticipation of certain death, would seem to me preferable to that slower and more horrible process by which the patient is left to cough up mingled matters of serum, blood and pus, and even masses of his own putrid lungs; knowing that there can be but one end to it all, and longing for that end to come. At any rate, by the aid of boric acid, or other antiseptics, these same matters, extruded through a direct external wound, could be rendered inoffensive, and the patient could die in peace, and without feeling himself an object of horror to every one around him.

The case (published at page 1145 of this day's JOURNAL) which was under the care of Dr. Strange, of Worcester, seems to me to illustrate admirably what I have been saying.

In addition to the weight it gives to the propriety of opening and cleansing traumatic abscess of the lung, it affords us a timely warning on a subject of everyday practice. Day by day we are some of us called to administer an anæsthetic, whilst we either ourselves draw teeth, or the dentist does so for us, and the case I have just related shows how careful we should be to avoid such accidents as that to which Dr. Strange attributes all the mischief; and even if we do not think the danger proved by that case, the following one, also communicated to me by another old friend, Mr. Mason, of Bath, shows to demonstration that such an accident may happen.

He says: "R. H., a widow, aged 52, came to me on April 22nd, 1885, complaining of violent spasmodic cough, which she thought arose from a cold caught after having a tooth extracted on the 15th (seven days previously). I had difficulty in getting her to uncover a small portion of the front of her chest for examination, which was therefore necessarily of only limited extent, but over that portion I could not detect any breath-sound. I requested her to go home and to remain in bed the next day until I had seen her. On the 23rd the cough was incessant, and the breath-sounds very feeble and indistinct over the whole chest. On April 24th, when I visited her, she placed half a bicuspid tooth in my hand, saying, 'Look, there was the cause of my cough!' the tooth had been split vertically down the centre. On the 15th she went to a dentist to have this tooth extracted, and 'gas' was administered. On recovering she asked for the tooth, and was told that it had been thrown into the fire. But, as the dentist was not conscious that a portion was missing, it would appear as if a part had remained in the grasp of the forceps, while the other part fell back in the mouth, and was drawn into the larynx, and, the patient being unconscious, did not at the time excite cough. After expulsion of the tooth the violent cough ceased, but, up to the present time (August, 1887), she says she has occasionally a slight cough, and sometimes expectorates small pellets of blood."

To what mischief might not this piece of tooth have led, I would ask, had it not been arrested in the larynx, and had it not been expelled? Dr. Strange's case will supply the answer.

Thoracic Aneurysms.—Of the surgical treatment of the diseases of the great blood-vessels of the chest, I have nothing that is new to say.

In the whole course of my professional career, I have only seen one case of aneurysm of the thoracic aorta cured, but I think I have seen one. I had the opportunity to see the case in its early stage, and I had no doubt of the presence or nature of the disease; and I heard of the patient, after his cure, through his brother, the medical man who originally brought him to me, and who assured me that his recovery was complete. In this case, however, medicine, and not surgery, carried off the palm of victory; and, up to the present date, I hold that surgery is powerless in such cases. In that to which I allude the treatment consisted of, as nearly as possible, as total abstinence as that of a fasting man; of absolute recumbency during the whole treatment, aided (?) by iodide of potassium and acetate of lead.

So far as surgery is concerned, I think the day is still in the dim and distant future on which, whether by distal ligature; by electrolysis; by the insinuation into the sac of foreign substances; or by any means it has hitherto suggested, it will produce a reliable and successful means of curing such affections.

In aneurysms of the innominate artery, I am not averse to the at-

tempt to cure by distal ligature of the carotid and subclavian arteries; but I am not able to speak with any great enthusiasm on the subject.

I should resort to it, in performing such an operation, more from a sense of duty to my patient than with any great hope of success; and I should congratulate myself with profound thankfulness if, in any case, I succeeded in achieving permanent success.

Anæsthetics in Thoracic Operations.—One word on the propriety of the use of anæsthetics when performing any serious operation on the chest.

In many instances, especially where the performance of the operation is likely to be prolonged, or great pain is likely to be given, I would plead for the use of ether.

I have never seen any harm arise from its administration for such an operation, even though the sense of impending suffocation, due to the disease, has seemed to contraindicate it; but it is not, by any means, necessary in all cases; and the help that the conscious patient is able to afford us, by change of position, by greater or less efforts at expansion or contraction of the chest-walls, and in many little ways, is too great to be sacrificed for anything short of absolute necessity.

The Use of Antiseptics.—Of the use of antiseptics, I would say exactly the reverse; and I should regard myself as very culpable if I undertook any, even the simplest of such operations, without the use of every possible available antiseptic safeguard.

In even the most pressing cases, and under the most urgent circumstances, much may be done in this way.

A little turpentine wherewith to cleanse the skin; a little cotton-wool wherewith to filter any air that may or must enter the chest, are to be found in every house; and absolute purification of every instrument used, with ceaseless care in dressing, are essential in every case.

This I consider, gentlemen, to be a correct exposition of the present state of thoracic surgery; and I thank you for the patience with which you have listened to my attempt to lay it before you.

GANGRENOUS ABSCESS OF THE LUNG, PROBABLY CAUSED BY THE STUMP OF A TOOTH PASSING INTO THE RIGHT BRONCHUS, TREATED BY PUNCTURE AND DRAINAGE; RECOVERY.

By WILLIAM STRANGE, M.D.,
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It is the great and justifiable boast of modern surgery that it has carried its operations into the great cavities with a certainty and success almost equal to that which it has long claimed when dealing with the external organs of the human body. But I think that the physician of to-day may equally pride himself upon the increased exactitude of his diagnosis of diseases of the internal organs, and assert that, without the assistance of this more exact discrimination of the seat and nature of these diseases, the success which the surgeon claims for his bold operations would be very much reduced. Take the splendid achievements of modern surgery in regard to the abdominal cavity and its contents. Section, incision, ablation, or mere exploration of the abdomen is now undertaken with almost as light a heart as the reduction of a strangulated hernia or the removal of a necrosed bone. Yet it was the physicians who showed the way to this greater certainty and boldness of operating by bringing to bear upon the diagnosis of such cases greater acumen and greater discrimination than had ever before been used. And the same endeavour after greater certainty of diagnosis has been made in the case of the other great cavities, those of the chest and the cranium. We must admit, however, that a similar advance has not yet been made in these regions. We may ask if this difference arises from greater dread of the results of opening the cavities of the chest and the cranium, or from consciousness of defective diagnosis? Scarcely the former, because until a quite recent period no cavity of the body was held so sacred, so unapproachable, as that of the abdomen. Now, we do not scruple to open it for all sorts of reasons, nor hesitate to explore its contents, even when our notions as to what we shall find there are of the very haziest kind.

It is, then, probably the other matter which acts as a deterrent, namely, defective diagnosis. And I rather believe this to be so because, whenever a fairly easy diagnosis can be made, men have not been deterred from thrusting, for instance, a trocar into the cavity of the pericardium, or into the ventricles of the brain, or, as in the case

I am about to relate, into the lung itself. And yet, in the case of the pectoral and the cranial cavities, it is not quite the difficulty of making an exact diagnosis only which makes us pause, but to some extent the difficulty, when we get there, of finding what we are in search of, caused by the natural repugnance of the brain and the lungs to be meddled with; and the difficulty, or rather the impossibility, of turning them inside out, as we do the contents of the abdomen. When, however, the diagnosis is simple and the necessity urgent, we need not hesitate to open the pectoral cavity and its enclosure, the pericardium. In some cases it is not difficult to conclude that the latter is full of serum, and that the action of the heart is becoming fatally impeded thereby. My friend Mr Wheelhouse, of Leeds, some time ago rescued from impending heart suffocation a case of this kind, and others are on record. Again, large cavities within a phthisical lung are easy of discovery. The puncture and evacuation of their contents has been practised on several occasions, but hitherto with small results as to any benefit conferred by it. Puncture of the skull also, when the diagnosis is easy, as in some cases of chronic hydrocranium, is a simple, and sometimes a successful operation.

Successful puncture or opening of the skull to remove tumours in cases where the diagnosis has been worked out by the most splendid efforts of inductive reasoning, which has been done lately by Dr. Ferrier and others, is one of the medical marvels of the last few years.

E. M., a robust young woman, aged 23, with well-developed chest and fine physique, and in good health, although in infancy she had been the subject of scrofulous abscesses of the hands and feet, took chloroform for the extraction of several stumps of teeth, on February 17th, 1887. A few days afterwards a troublesome irritative cough came on, with slight muco-purulent expectoration. This condition continued until the month of June—four months. During this time she was never entirely laid up, although frequently confined to her bed for two or three days; nor did she lose very much flesh or appetite. The cough continued to annoy her greatly; the expectoration increased, and the strength began to fail. She was first seen by me as an out-patient at the Infirmary on June 8th, and on the 15th her case appeared to be so serious that she was placed under treatment in a private house.

Symptoms.—There was almost incessant cough, preventing any sleep, except by the use of narcotics; large muco-purulent expectoration, which was very offensive; coarse rales were heard over a large area of the centre of the right lung, extending from the upper third of the scapula down to the ninth rib vertically, and from close to the spine to just above the nipple transversely. In front, there was great tenderness over the third, fourth, and fifth ribs, but no pointing or bulging of the intercostal spaces. Over the other parts of the lung respiration was free and normal, with the exception of some dulness at the base. The left lung was rather hyper-resonant. The paroxysms of coughing continued unceasingly for several hours at a time, almost abolishing sleep. There was not very much loss of flesh; the appetite good; pulse 110; temperature 102° F.

At a loss to conjecture a sufficient cause for this condition of the lung, all signs of pneumonia or of tuberculosis being absent, I fell back upon the history of the tooth-drawing business. From the account given to me by a young friend who accompanied the patient to the dentist, it appeared very probable that a stump had escaped the operator, and had passed down the trachea into the right bronchus. This idea was confirmed by the friend stating that there was great searching of the mouth for a stump, and some alarm expressed. Further, she stated that before the patient applied to me at the Infirmary, rings of cartilage, showing necrosis, were found in the sputum, which was horribly offensive. From June 15th to July 18th the case continued to increase in severity and urgency. The cough was almost incessant; bad bedsores formed from the continuous sitting posture; the temperature, however, only varied between 101.4° and 99°, and was often normal.

The pulse on June 16th was 146, on the 19th 160, then it fell gradually to 120 on the 26th, again rose to 140 or more, and finally dropped, under large doses of brandy, to 120, where it remained until July 18th, the thirty third day of treatment, and five months from the date of the tooth drawing. During the whole of this time hectic fever continued to consume the patient's strength. The expectoration was putrid to the last degree, the room, and also the house itself, being only rendered bearable by chlorine gas freely used, with deodorants to the sputum. For some time past the sputum had contained a large quantity of broken down pulmonary tissue which settled in quantities to the bottom of the vessel. From two to three pints of this stinking stuff were expectorated daily. Occasionally it ran in a