1. It is most exceptional to find a cerebral aneurysm which is not associated with fungating endocarditis.

2. The lodging of a septic embolus is the starting point of the changes which take place in the vessel.

3. The clot inflames and in most cases disappears, the vessel dilating from the inflammatory changes in its coats.

4. An aneurysm may form and rupture in three weeks.

5. The onset of the embolism may not be marked by any symptoms, and the rupture of the aneurysm may be the first indication that there is danger.

CASE CLXXVII.—A man brought in dead, ill one hour. Aneurysm on middle cerebral had ruptured into lateral ventricle. The clot weighed 4 ounces. Fungating endocarditis.

The aneurysms are usually on the surface of the brain, and when they rupture they are more rapidly fatal than other forms of cerebral hæmorrhage. As the aneurysm increases in size it tends to spread inwards, plunging up the cerebral tissue, and may rupture into the lateral ventricle, although it has originated on or near the surface. Cases of cerebral hæmorrhage in young people will generally be found to have originated in aneurysm.¹

THE QUESTION OF OPERATION UPON FISTULA IN PHTHISIS.²

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IN books of medicine I have scarcely been able to find any real, clear, and useful guidance as to the course which should be pursued in cases which fall under the heading of this paper—namely, patients who suffer from phthisis combined with fistula. Moreover, many of the books to which I have referred appear to me to be sadly contradictory one of the other; some say, "Do not on any account touch a fistula in a patient suffering from phthisis;" others state that it is advisable to operate. By far the greater number of the authorities give barely more than a single paragraph to the treatment of this combination of phthisis and fistula.

I must make exceptions. Dr. Theodore Williams, in his book, mainly alludes to the frequent alternation between the free discharges from the fistula and the activity of the phthisis, and adds that this circumstance has deterred many physicians from counselling and surgeons from performing operations in such cases, from the dread of the eruption of miliary tubercle that sometimes follows on a successful operation on fistula in phthisical subjects.

Dr. Douglas Powell, in the last edition of his book on *Diseases of the Lungs*, writes to the following effect: "Fistula in ano occurs in something less than 5 per cent. of cases of phthisis, and, in my experience, is almost limited to males. Amongst those afflicted with fistula, however, phthisis commonly supervenes or already exists." He then states two circumstances which should be borne in mind:

1. Fistula may arise from various causes, with no necessary connection with tubercle; but, having become chronic, it is very apt to become tubercular, and to lead to secondary tubercle in other organs, especially the lungs. Characteristic bacilli have been found in the indurated walls of most chronic fistulæ. In cases of this kind, timely operative treatment of the fistula may avert secondary tubercular affections of its walls and of other organs.

2. Fistula more commonly occurs in cases of phthisis when the cachexia of that disease is already marked. It is then impossible to say whether the disease was tubercular from the first, but it soon becomes so. In the presence of decided chest disease fistula is of secondary importance, and, unless causing much additional suffering and exhaustion, should not be operated on.

He further remarks that "the observed alternation between the activity of fistula and of chest disease has deterred surgeons from operating with willingness. A more real objection is the risk of operations failing from the morbid character of the surrounding tissues, and the further danger of the activity of the chest mischief supervening on the breaking of the tubercular induration about the fistula, or upon the renewed febrile action attendant

on operations in unhealthy persons." Dr. Douglas Powell adds that bad cases of fistula may require some operative measures.

In his book on *Phthisis*, published a quarter of a century ago, Dr. J. E. Pollock writes as follows on the question of operating on fistula in phthisical cases:

"The result of such cases as we have witnessed is that the operation is not ordinarily successful in healing the fistula; that, if successful for a time, the discharge almost invariably returns; that the phthisical symptoms always increase after the healing of the sinus; and that the discharge itself is a condition favourable to the quiescence of the irritation in the lung. In very frequent instances the aggravation of all the symptoms of phthisis has occurred almost immediately after the suppression of the discharge." (p. 317). On the next page he writes: "When the operation is successful the patient is commonly, as regards the phthisis, in a quiescent state; but generally, within one or two months, the lung disease assumes activity." He then gives an analysis of 31 cases of phthisis with fistula. "Of these, 10 were operated on with the following result: Fistula healed and chest symptoms became worse in 3 cases; phthisis commenced after the operation in 2 cases; the fistula returned in 3 cases; result doubtful in 2 cases. In 21 cases no operation was performed; fistula persistent, chest symptoms remained chronic, in 14 cases; fistula persistent, chest symptoms became worse, in 4 cases; fistula had existed before phthisis, the latter being of a periosteal form, in 3 cases." (pp. 319-320).

Just contrary to some of the above opinions is the following passage from the late Dr. Fuller's book on *Diseases of the Chest* (p. 441): "As long as the discharge from a fistula is insignificant and the patient's mind is not seriously disturbed by its continuance, so long is it advisable to confine our efforts to the treatment of the constitutional malady, and not to disturb the fistula. Any attempt at curing it by operation, under these circumstances, would probably be followed by an immediate increase in the cough and the pectoral symptoms, and therefore would be highly injurious. But I do not hold with those who maintain that a fistula occurring in the course of phthisis ought never to be interfered with. In some instances the discharge is profuse, and constitutes an important source of waste, and the patient is so distressed and alarmed at its continuance that no treatment can be of avail until his nervous apprehensions are overcome. He can neither eat nor sleep for thinking of it, and his whole system is depressed in consequence. In such a case I have known the greatest benefit result from an operation, combined with the formation of an issue in the arm, the use of a proper diet, and the administration of cod-liver oil, quinine, and other appropriate remedies. Not only has the fistula healed, but the general health has improved, the patient has gained in flesh, and the physical signs of pulmonary disease have materially decreased."

In the face of these contradictory opinions I think that, for the guidance both of physicians and surgeons, some fairly definite rules had better be laid down in fuller detail than has hitherto been the case. For what at present is the procedure too often pursued? If the patient comes to a surgeon, the latter perhaps at once says, "there must be an operation," without consulting a physician as to the condition of the lungs. On the other hand, the physician may refuse to allow an operation without consulting a surgeon as to the nature and extent of the fistula. It is absurd for either surgeon or physician to form a decided opinion without conferring one with the other, both as to the nature and extent of the fistula and the condition of the phthisis. Without such consideration, how can it be accurately determined whether the fistula ought to be treated or not, and, if so, in what manner?

Were such prior consultations universally held, it would be found that in patients who suffer from fistula combined with phthisis there are certain peculiarities of aspect to be observed in the fistula itself and in the surrounding parts. Most of these peculiarities were, I think, first recorded by my father; and, as they are of extreme importance from a surgical point of view, I have endeavoured to arrange the following tabulation:

Fistula in a Healthy Subject.—A fistula in the healthy occurs about as frequently in females as in males; the buttocks are plump, and the ischio-rectal fosse well filled with fat; there is an average amount of crisp hair; the sphincters have good contractile power; fistula begins, as a rule, with an acute abscess, attended with great pain; the external opening of the fistula is small and pouting; the skin around the external opening and along the back of the fistula is healthy, or only slightly discoloured; the internal opening is usually small, barely admitting the probe; the sinuses

¹ It would have occupied too much space to publish here even the briefest abstract of all the cases with which these lectures deal. The lectures will be republished with the cases *in extenso*.

² Read before the Medical Society of London.

are hard, and feel like the stem of a clay tobacco pipe; the discharge from the fistula is healthy or thick pus.

Fistula in Phthisis.—Fistula in phthisis is most common in the male, being rarer in the female; the buttocks are thin, and the ischio-rectal fossæ depressed from want of fat; there is an excessive amount of hair, which is long and of a silky nature; the sphincters are weak, so that when the finger is introduced into the bowel little resistance is offered; fistula begins with a chronic abscess, frequently with no pain; the external opening is frequently large and ragged, and irregular in form; the skin around the external opening is blue and unhealthy of aspect; the internal opening is large, easily admitting the finger; the sinuses are softish, and feel rather as a gutter or depression in the skin; the discharge is thin and watery.

From the above peculiarities, it is easy for the surgeon to diagnose, without examining the lungs, that the patient has phthisis or an extreme phthisical tendency.

It is scarcely necessary to remark that, though these are the general local peculiarities of phthisical, as distinguished from ordinary fistula, yet in a few cases some of these may be absent.

Now that we have accumulated sufficient data for the distinguishing of phthisical from ordinary fistula, I will endeavour to make some classification of this complication of complaints, and will place fistula in phthisical patients under the three following heads:

- i. Fistula in conjunction with active tuberculosis.
- ii. Fistula in conjunction with chronic phthisis.
- iii. What I prefer to call "strumous fistula," which answers to what is often termed "scrofulous phthisis."

I will now describe these three kinds, and the treatment I consider to be advisable in each case.

i. **Fistula in conjunction with Active Tuberculosis.**—This occurs in patients who have distinct signs of acute tubercular disease, and probably have not long to live. In this class of cases the fistula commences with a tubercular ulcer of the rectum, and develops into a blind internal fistula. This has a large internal opening, and a cavity into which fæces readily find their way and accumulate, giving rise to great pain. In such cases, it is hardly necessary to say that no attempt should be made at cure, and as little as possible should be done; but to leave the sufferer altogether unrelieved is positively cruel. An incision should be made from the outside into the cavity of the fistula, so as to allow the fæces collected therein to escape, and thus mitigate the pain. If this operation be performed, much suffering may be saved, and the patient's life be rendered comfortable until the end.

ii. **Fistula in conjunction with Chronic Phthisis.**—This comprises those patients who have had hæmoptyses, and may even still have the remains of a cavity or consolidation at the apices of the lungs, without any very active symptoms of phthisis. In this kind the fistula begins in the bowel or just at the entrance of the anus, and burrows outwards, undermining the skin. It has an internal and also a large external orifice, the latter of which has unhealthy, overlapping, livid skin. Judicious action is here called for; it is obvious that in order to give the lung a chance of recovery the discharging fistula should be cured, and a cessation be put to the drain on the system. In this variety of fistula the main sinus should first be laid open, but care should be taken to divide the external sphincter as little as possible. Fortunately, it is not usually necessary to cut deeply in these cases, for the sinuses are generally superficial. The edges of the unhealthy skin should be cut off and the base of the sinus carefully scraped.

iii. **Strumous Fistula** occurs, I think, in patients with a family tendency to phthisis—that is to say, some of the members have actually had phthisis, and others have suffered from strumous joints or various forms of glandular disease; but in the patient himself the only evidence of a phthisical diathesis is the fistula. It usually commences as a chronic abscess, and may, or may not, have an internal opening. In my opinion (and this is fortified by Dr. Douglas Powell's remarks on his first kind of phthisis), this form of fistula should be promptly attacked; for if it is allowed to remain, it may become the focus of active tuberculosis which may invade other organs of the body. The operation should be performed in the same way as that on any traumatic fistula in the healthy subject.

I have now indicated the particular procedure which appears to me to be advisable in each kind of fistula with phthisis, and will next mention the general rules for preparation of the patient for operation and after-treatment.

When both physician and surgeon have decided that an opera-

tion is desirable, the patient should, if possible, be removed to some favourable place, such as one of the South Coast seaside resorts, Margate, Brighton, Bournemouth, and so forth. A good time of the year should also be chosen, say late spring or early summer; and, if the patient has a cough, it is highly important that this should be allayed, otherwise the straining caused by the cough will retard the healing of the wound. The ordinary routine of life, so far as regards diet, both before and after the operation, should be interfered with as little as possible.

The question of the anæsthetic to be employed requires the most careful attention. Chloroform should be administered in preference to ether, for chloroform does not irritate the air-passages, and reduces to the minimum the secretion of mucus; whereas ether irritates the respiratory passages, increases the secretion of mucus, and may cause cough, or even congestion of the lungs.

It is advisable to allow the patient to get up as soon after the operation as is prudent, say the next day, or at any rate for him to remain in a semi-recumbent posture, and not be kept strictly on his back (or side), as is wise after operating upon cases of ordinary fistula. This is recommended, because, in patients with a tendency to lung-trouble, the sudden subjection to an absolutely recumbent position may cause hypostatic congestion, or an aggravation of the existing lung complaint. With regard to the local treatment of the wounds, no more than is absolutely necessary should be done. Dry dressings are, as a rule, the most satisfactory to use.

Before closing this paper, I must once more insist on the cardinal point of my argument—the importance of both physician and surgeon making a thorough examination of the extent and nature of the fistula and the nature and condition of the phthisis. Upon this examination the treatment that is desirable entirely depends. No one will think that I recommend operation in all cases of fistula combined with phthisis; for a small fistula, which causes no pain and has little or no discharge, may very well be let alone. On the other hand, if there is great pain and a copious discharge, or if there is a tendency to burrowing, it is quite as necessary to treat the fistula as it is to treat the phthisis.

One grave consequence of this complication should be studiously borne in mind. Phthisical patients are usually very hopeful, and are constantly making plans for the future with a happy absence of despondency. But a strong, healthy man who suffers from fistula speedily becomes exceedingly despondent. *A fortiori*, then, if a phthisical patient is told that he has also a fistula which must not be cured or even treated, although he may scarcely worry about his phthisis, he may be thrown into a state of great perturbation and mental anxiety by the news that he has a fistula which cannot or ought not to be cured. The mental anxiety and profound depression thus occasioned may do the phthisical patient more harm than is likely to be attendant on an attempt to relieve, or perhaps cure, the fistula, the cause of his present worry.

FOUR CASES OF TIN POISONING CAUSED BY TINNED CHERRIES.

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THE following cases are of interest as indicating the definite toxic symptoms produced by tin introduced as a soluble salt into the system by means of cherries and their juice, which had been preserved by the ordinary process of being hermetically sealed in a tin. And since but little is known of the actual amount of a soluble tin salt required to produce serious and dangerous toxic symptoms, a useful feature in this communication is that the form in which the tin was carried into solution has been ascertained by analysis, and the amount of the soluble tin salt present in the cherry juice has been quantitatively determined.

On January 17th of this year, a tin of meat and a tin of cherries were opened, and the contents partaken of at the same time by four men, each of whom ate both meat and cherries and drank some of the cherry juice. One and a half to two hours later they were all attacked with the symptoms of irritant poisoning described below. Three of the cases were admitted into the North-