THE TREATMENT OF FISTULA IN ANO,*

WITH ESPECIAL REFERENCE TO THE WHITEHEAD OPERATION.

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A CAREFUL study of the literature of fistula in ano leaves one with the feeling that the surgical treatment employed in many of these cases is not productive of satisfactory results. It should be borne in mind that it is not merely the cure of the fistula which is desired but that in addition the patient should be left with a rectum as nearly normal in function as possible. It not infrequently happens that after an operation for fistula in ano, the last state of the patient is much worse than the first, especially if more or less marked incontinence of fæces results.

It has for a number of years been the writer's endeavor to perfect a method of operating upon these conditions which would at the same time insure healing of the fistula within a reasonably short period of time and leave the patient with as nearly a normal rectum as possible. From a careful study of more than one hundred consecutive cases of fistula in ano, the writer has been able to draw some personal conclusions as to the etiology, pathology, treatment and results of such treatment. Very often regarded as essentially minor surgery and in many cases comparatively easy of cure, fistula in ano may assume such extensive and serious characters as to test the highest surgical skill and necessitate operations of decidedly major proportions.

The classification of fistulæ into complete and incomplete is of no particular importance, dependent as it often is upon the ability to demonstrate a communication with the bowel. Such communication exists in a great majority of cases even

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though in many instances it may be microscopical rather than macroscopical.

The existence of fistula presupposes some antecedent infection and necrosis which in the great majority of instances is a simple pyogenic infection.

Tuberculosis plays only a comparatively insignificant rôle in the causation of this condition. The relatively high percentage of tuberculous fistulæ in ano given by some writers is undoubtedly based rather upon a clinical than upon a bacteriological or histological diagnosis. The more that careful laboratory methods are employed in the study of fistula in ano, the smaller the tuberculous percentage grows. Furthermore, in the majority of the tuberculous cases, the condition is usually secondary to some other demonstrable tuberculous lesion elsewhere in the body rather than the primary focus. No period of life is exempt from the affection, for fistulæ in ano are observed from the earliest infancy to advanced old age. Most fistulæ originate from within the bowel, only comparatively few having their origin from without the bowel. The majority of fistulæ originate in an infected hemorrhoid. The sequence of events is first a small thrombus, either infected or non-infected. In the latter variety infection soon occurs. Through the lymphatics the infection extends to the non-resistant perirectal fat and presently a perirectal abscess presents and opens either externally or internally or in both directions. If the principal opening is external the internal opening may be scarcely more than microscopical, but the examining probe is often found to pass into a hemorrhoid and it is this opening which usually determines the chronicity of the process. In other instances a fissure, ulcer or superficial abrasion is the portal of entry for the infecting micro-organisms, and in still other cases there is no demonstrable portal of entry. In some instances ulcerative processes well up the rectum may be the starting point of fistulæ, but it also sometimes happens that the infectious process originates low down in the hemorrhoidal area, extends upward around the rectum and perforates into the bowel two or three inches above the

anal margin. Examination of such a case some time after the development of the fistula may lead one to suspect a high origin for the fistula when in reality it is low down, and possibly concealed in an insignificant hemorrhoid.

It is fortunate that the internal opening of most fistulæ is between the external and internal sphincters and the satisfaction which follows most methods of operation employed depends upon this fact, necessitating, as it does at the most, damage only to the external sphincter. A considerable number of fistulæ, however, have their internal opening above the internal sphincter, and it is this variety which the surgeon finds most difficult to cure without more or less serious impairment of rectal function. Many fistulæ have a decided tendency to ramify in the loose fat and tissues about the rectum and buttock and it is these manifold and intricate ramifications which contribute so much to the difficulty of satisfactory surgical treatment.

Two cardinal principles should underlie the treatment of fistula in ano, first the separation of the fistulous tract or tracts from the communication with the bowel, and secondly, the adequate closure of that communication with the removal of all the diseased tissues in the rectum. These measures having been employed, there is no occasion for an extended and complicated dissection and removal of all the ramifications of the fistulæ, for with adequate drainage externally upon the skin, they will tend to heal. The chronicity of fistulæ in ano is not dependent upon the lack of drainage but rather upon a communication with the bowel and the failure in many instances to recognize that such a communication may not be macroscopically demonstrable. The secretions of fistulæ find their way to the external or internal orifices with comparative ease, and only rarely does any marked retention of secretion occur, and when it does occur, it usually indicates an acute exacerbation of the infectious process. There is no reason why fistulous processes in the tissues about the anus should heal in any way differently than in similar tissues in other parts of the body, provided that the source of the infection is eliminated.

The various theories advanced to explain why under the old methods of treatment many fistulæ did not heal are hardly rational. If the mucosa of the bowel did not feed the fistula, there is no reason why the sphincteric action should prevent healing, for the normal activity of the sphincters is not vigorous enough to affect tissues several inches distant and it requires some stretch of the imagination to understand how it could very seriously affect the healing even of tissues near the sphincter.

It should also be borne in mind that the surgeon is not always responsible for the weakness of sphincteric action which sometimes follows operation for fistula, for it does now and then happen that the more or less extensive infection, associated as it is with necrosis, causes a destruction of a part, and sometimes of a considerable part, of the sphincter muscles. In such a case, no matter how skilfully injury to the sphincters may be avoided, more or less marked incontinence of fæces may follow, which the patient is inclined to attribute to the operation. Occasionally, too, the extensive perirectal inflammation may subsequently, after a fistula is cured, cause more or less cicatricial contraction about the anus or lower rectum, with some degree of stenosis or stricture. This condition, too, is not always to be attributed to the operative procedure employed.

It should always be the surgeon's endeavor to avoid if possible any injury to either the external or internal sphincter, for only in this way can any definite assurance be had that the subsequent sphincteric function will be satisfactory.

The treatment of fistula in ano can be divided into the conservative or non-operative and the radical or operative. Among the more commonly employed of the conservative measures may be classed the various forms of injection, such as silver nitrate, carbolic acid and other escharotics. The use of bismuth paste may also be properly classed under this heading. While this method has some advocates and in certain selected and mild cases may produce a cure, it is hardly to be considered as an important method of treatment. The elastic ligature is also essentially a conservative measure, and while it in times past

had some enthusiastic advocates, it is essentially obsolete to-day and is in no wise comparable in its efficiency to many other surgical procedures.

The radical or operative methods of treatment may be classified under three headings: (1) incision; (2) excision; (3) excision and suture.

When the fistula is of the submucous variety and does not in any way involve the sphincters, incision often gives satisfactory results. In more extensive and complicated cases, it necessitates cutting one or both sphincters and for this reason alone should if possible be avoided. Excision either with or without suture is better adapted to the more extensive forms of fistula in ano and various modifications of the procedure have been recommended by different surgeons. The essential feature of this type of operation is the attempt to eradicate by clean dissection the fistulous process and to close by suture the communication with the bowel. Against this operation may be urged the difficulty in many cases of determining the communication with the bowel as well as the difficulty encountered in the attempt at dissection of all the fistulous ramifications. It also not infrequently happens in this type of operation that serious damage is done to the sphincters. Another disadvantage of this method is the more or less protracted post-operative treatment which some of these cases require, as well as the fact that it does not provide for the relief of the diseased condition of the rectum which so often precedes and accompanies fistula in ano and to which a great majority of the cases are essentially due.

While the treatment of practically every other surgical malady has been improved in the past few decades, the treatment of fistula in ano remains about where it was twenty years ago and the general results of such treatment are but little if any more satisfactory than they were then.

Failure and unsatisfactory results led the writer several years ago to endeavor to devise a method of treatment which would be general in its applicability, easy and safe in its performance and sure in its results. Long a firm believer in the

efficacy of the Whitehead principle of operation in the treatment of benign surgical conditions of the lower two inches of the bowel, it was but a step to the application of this principle to the treatment of fistula in ano.

The operation consists, first, in a thorough dilatation of the rectal sphincters, laterally, as this has been shown to produce less disturbance of the bladder function than when done anteroposteriorly. With a probe the general course of the sinuses is located and the communication with the bowel determined, if one be demonstrable. A circular incision at the junction of the skin and mucosa is then made and the bowel dissected away from the external and, if necessary, the internal sphincters, which are carefully pushed upward and away from all possibility of injury. The dissection of the bowel is continued upward until well above the level of the internal opening, if one exists, or to the attachment of the levator ani muscle if no internal opening can be demonstrated, care being taken to keep as near the mucosa as possible. In this way complete separation of the fistulous tracts from all communication with the bowel is effected. The external fistulous opening or openings are then somewhat enlarged, and with a small curette all the demonstrable fistulous tracts are carefully curetted. Counter openings in the skin are made in tortuous complicated fistulous tracts if necessary. With interrupted silk sutures, the bowel, mobilized and cut off above the level of the internal fistulous opening, is approximated to the skin at the anal margin, the sutures being placed in such a way as to obliterate all dead space.

In cases where no internal opening can be demonstrated, the dissection of the bowel is never carried above the insertion into the rectum of the levator ani muscle indicated by the so-called "white line," for comparatively few fistulæ ever extend above the attachment of the levator ani muscle to the bowel. The fistulous openings are lightly packed with gauze and a rectal plug is inserted for a few hours to control oozing and insure approximation of tissues and the operation is completed. The fistulous openings are kept open with gauze for a

few days and then allowed to take care of themselves, no particular treatment being required after the first week or ten days. The bowels are moved with a mild cathartic at the end of forty-eight hours, the silk sutures come away of their own accord.

In some cases of extensive and complicated fistulæ, it may require several weeks for all of the sinuses to heal completely, but when this has occurred, there has never been any tendency to recurrence. By this procedure every possible requisite for rapid healing has been fulfilled; the internal fistulous opening rapidly and securely closed; all communication with the fistulous tracts severed; hemorrhoids and other diseased conditions removed; the sphincters preserved intact and a comfortable and rapid convalescence assured. By this method fistulæ communicating with the bowel more than three inches above the anal margin have been cured, with preservation of normal sphincteric function.

It is always well to avoid operating for the cure of fistula during the acute stage of inflammation. In such cases it is well to freely incise the infected area, and, when the active process has quieted down, the radical operation can best be employed.

The above method has been employed in 105 consecutive cases upon which this report is based. In all of these cases careful histological examination of the tissue removed was made at the Bender Hygienic Laboratory. Of this number 96 were found to be histologically non-tuberculous and 9 histologically tuberculous. Of the 9 tuberculous cases, 7 had demonstrable pulmonary tuberculosis at the time of the operation. Of the 105 cases, 64 occurred in males and 41 in females. Arranged according to age, 2 occurred in the first decade; one of them in a child of 10 months; 8 occurred in the second decade; 37 occurred in the third decade; 30 occurred in the fourth decade; 15 occurred in the fifth decade; 10 occurred in the sixth decade and 3 occurred in the seventh decade.

In practically all of these cases it has been possible to trace

the subsequent history of the patients, and in all of them, so far as we have been able to determine, the fistulæ have healed and remained well. Some of the patients have died, but none from causes associated with the fistulæ except in the cases of pulmonary tuberculosis, four of whom have died. There was no mortality associated with the operation. In one case an abscess formed in one of the ramifications of the fistulous tract, which required incision about one month after the operation, but which subsequently healed and has remained well. This was the only case in which any kind of a second operation was required. Some of the cases had been previously operated upon unsuccessfully elsewhere and some damage done to the sphincters. In seven of the cases some degree of stenosis or stricture developed subsequently, but all of these were cases with very extensive perirectal inflammation and necrosis, in most instances associated with bowel openings from two or three inches above the anal margin. The use of hard rubber rectal dilators inserted by the patient once or twice daily effectually relieved the stricture in all of the seven cases, so that at this time none of them have occasion to use the dilators. These strictures were but the natural result of the extensive scar tissue due to the widespread inflammation. One of these cases now has marked incontinence of fæces due to an almost complete degeneration of the external sphincter muscle associated with partial degeneration of the internal sphincter. Three others of these seven have more or less incontinence of fæces, when the bowels are loose, due, so far as can be determined, to the same cause. The remaining cases of the entire series have practically normal sphincteric function.

From several years' study and experience in the treatment of fistula in ano, it may be concluded:

1. That probably not more than ten per cent. of fistulæ in ano are tuberculous and that a great majority of these are secondary to demonstrable tuberculosis elsewhere in the body, usually in the lungs.

2. That the great majority of fistulæ in ano originate from

a diseased condition of the rectum, existing in the lower one and one-half inches, and that this diseased condition is usually a hemorrhoid.

3. That the essential principles underlying the cure of fistulæ in ano consist in:

(a) the severance of the communication between the bowel and the fistulous tract and

(b) the removal of the diseased portion of the bowel, including the fistulous opening.

4. That a widespread and often destructive dissection and removal of the fistulous tracts in the perirectal tissues is unnecessary.

5. That it is possible to cure fistulæ in ano without injury to the sphincters and with a preservation of all the sphincteric function possessed prior to operation, by the application of the Whitehead principle of rectal excision.