

MARCY (H.O.)

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SURGICAL TREATMENT
OF
HEMORRHOIDS

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BY
EXCISION AND CLOSURE WITH THE BURIED
ANIMAL SUTURE

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THE SURGICAL TREATMENT OF HEMORRHOIDS

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EXCISION AND CLOSURE WITH THE BURIED ANIMAL SUTURE.

In the evolution of modern surgery it is an interesting study to observe the gradual and almost complete elimination of methods in surgical procedure which, at not a remote period, were considered indispensable and final.

Thus we note the relegation of the cautery, accompanied by the condemnation of the barbarous methods under the sway of which, at an earlier period, every variety of wounds were treated.

The use of the ligature for the constriction of structures, to cause their necrosis and elimination by suppuration, has been abandoned as equally unsurgical and unscientific. The last stronghold in which these methods have found refuge is their fundamental entrenchment in the rear of the column; and it is almost only in the treatment of hemorrhoids that any of the surgeons of the present are found still clinging to these procedures of the fathers.

It is in the conscientious belief that other and better measures should be substituted, here as elsewhere, for the cure of one of the most common and troublesome of the diseases usually classed as belonging to minor surgery, that I offer this contribution.

The causation of the ectasic condition of the hemorrhoidal veins is an interesting study, especially so since in no other part of the body do we find similar conditions or results.

It is important to remember that the arteries in the lower portion of the rectum descend vertically in parallel lines toward the anal aperture in the connective tissue between the mucous

membrane and the muscles. The subdivision is by short branching vessels, and the blood is received through the capillaries into an extraordinary network of veins which empty through the inferior mesenteric into the portal system. These veins are entirely without valves. The absence of valves has been adduced as evidence that in the earlier period of the developmental series man did not maintain the upright posture, and many authors, from Morgagni and Boerhaave to the present, have found in this evidence why quadrupeds are not subject to hemorrhoidal diseases. It seems, however, a just criticism that the weight of the venous column alone acts only in a very subordinate degree as predisposing cause, although manifestly an important factor after the blood current becomes greatly retarded in the oftentimes enormously dilated hemorrhoidal veins. Were the cause to be found in this peculiar disposition of the portal circulation, the upright position of man would make this condition the rule rather than the exception, and it would be indeed extraordinary to find the varicosities limited to the hemorrhoidal plexus and lying almost entirely external to the sphincter muscle. Oftentimes, however, after the pathological condition has become well established, the current through the ectasic vessel is so greatly retarded by the weight of the blood column in the erect position that most invalids learn to seek relief from change of posture.

In the relation to the surrounding pelvic organs the hemorrhoidal vessels occupy a dependent position, and their only support is derived from a loose network of connective tissue. It is apparent that the anatomy of these thin-walled vessels, their relation to the surrounding parts, and their physiological function furnish, as it were, a predisposing cause of disease. To this very probably may be added individual structural weakness, as is often exhibited in persons with thin-walled veins of the lower extremities.

It has long been recognized that the varicosities of the hemorrhoidal vessels, which are wanting in the lower animals, are comparatively rare in the savage races, and become in a considerable ratio a more and more constant factor in the sedentary occupations pertaining to modern civilization. A great variety of pelvic diseases in the female, and the genito-urinary diseases in the male, complicated with constipation, are in a large measure active causes.

The rectum may be viewed as a convenient cesspool for the more or less constant reception of the waste and worn-out débris of the alimentary canal, which is ever poured into it in a semi-fluid state. The curves of the lower bowel, from the sigmoid flexure downward, are an evident design, in part at least, to vary the support of the weight of the column, and are admirably adapted to deflect and equalize the pressure. To still further aid, that portion grasped by the sphincter ani is firmly held in the levator loop, and by it is carried upward and forward, thus taking the weight of the mass in a large measure off from the anal outlet.

When the rectal contents remain sufficiently soft to produce everywhere equable pressure, the circulation is comparatively little disturbed and defecation is accomplished with very little muscular effort. Let retention of the contents, with absorption of the fluid portion, go on until the moulding process becomes one of difficulty, and the reverse is true. The overloaded rectum produces pressure upon the venous return current, reflexive nervous irritation supervenes, a hyperesthetic state follows with increased tension of the sphincter ani; *pari passu* a cellular infiltration goes on in the loose connective tissue of the parts, as the result of the venous congestion, and the irritated nerves continually repeat the telegraphic messages of pain and suffering.

Although the pathological conditions above described produce by far the larger part of suffering ascribed to so-called "piles," we must not forget that there are other diseased conditions which may be confounded with the above symptoms. Small, fleshy masses about the verge of the anus, sometimes called condylomata, without reference to cause, are of easy distinction. These have nothing whatever to do with the hemorrhoidal veins, and are changes in the cellular structure of the skin and subjacent parts or mucous membrane, and may be the result of friction or erosion arising from a variety of causes.

The so-called villous tumor of the rectum is of sufficient frequency to be held in consideration. It is not unlike the villous growths of the bladder and other mucous surfaces. Its extraordinary vascularity commonly reveals its presence because of hemorrhage, and, unless differentiated, it will be diagnosticated as a bleeding pile. The soft, mucous polyp of the rectum is an adenoid structure of close relationship to the villous growth and is sufficiently often the cause of suffering to be kept in mind.

The dilatation of the hemorrhoidal plexus is usually underestimated as ordinarily examined. When the sphincter has been dilated under ether it will often be found that a rosette of vessels extrudes the size of a small tomato.

Laceration of the perineum in the female is very commonly accompanied by such enlargement of the vessels, caused by the rectocele and defective function of the pelvic organs. When the laceration of the parts has included the sphincter the ectasic vessels are wanting, although the mucous membrane of the lower part of the rectum under these conditions is often seen as a soft, projecting, reddish tumor. From this may be drawn the inference that the sphincter constriction, with the changes incident upon the retention of the rectal contents, acts as the cause of the dilated vessels, rather than the superincumbent weight of the portal column of blood.

When the venous plexus of vessels has become pronouncedly varicosed they have as a covering the lax submucous tissue of the rectum close to the anus, and, when put on tension, are protruded as a ring of transverse rugæ round the anal aperture. Certain of the rugæ are developed into roundish protuberances and sometimes into tumors of considerable size.

Upon the introduction of the ligature for the arrest of arterial hemorrhage by Ambrose Paré there arose a wide application of this important surgical innovation. Nothing seemed more natural than that it should find one of its most valuable uses in the treatment for the cure of hemorrhoids.

From the above description of the causes and pathology of hemorrhoidal tumors it might not seem difficult to determine when these conditions become amenable to surgical treatment.

Perhaps a more accurate definition might be given as follows : When the blood equilibrium in the hemorrhoidal vessels has become so changed that the vessels themselves are ectasic, and the blood current so impeded that, in part at least, stasis has occurred, the surrounding connective tissue become edematous, the nutrition thus impaired causes nerve irritation, difficult defecation, with more or less marked resulting disturbance of nerve reflexes. Such conditions, as a rule, do not tend to spontaneous recovery, and the patient is doomed to a greater or less degree of invalidism.

The presenting masses are readily exposed, and few procedures are easier than their ligation. In this we find abundant

reason why the practice of ligation has continued until the present. The criticism of this method that it is unsurgical is found in that, while it includes in a blind way a considerable portion of the dilated vessels, it also compresses and destroys tissues important for preservation—to wit, namely, the surrounding integuments, mucous membrane, nerves, etc. It also leaves of necessity a very considerable portion of the hemorrhoidal plexus of veins, which too commonly reappear after operation, reproducing pathological conditions with their attendant suffering not unlike the primary affection. These are grave criticisms, to which may be added that which has caused the abandonment of the ligature, similarly applied, in every other part of the body—namely, the necrosis of the portion included, attended by a necessary local, infective, and suppurative process. At the best this is followed by a comparatively slow and painful convalescence, and all are aware that resultant septic conditions may pertain dangerous to the life of the individual.

This operation has been variously modified in order to avoid these objections. In the attempt to maintain an aseptic condition of the lower bowel, constant disinfection by the use of iodoform, submucous ligatures, etc., has been employed.

The only other method which the recent work presented to the profession under the assuming title of the "American System of Surgery" has deemed worthy of serious discussion, is the destruction of the hemorrhoidal masses by means of the clamp and cautery. This is advocated as an advantage over the ligature from the fact that the destruction of the tissue included by the clamp is immediate and complete, that it controls hemorrhage equally as the ligature, and that septic processes are less likely to supervene.

The objections to the cautery are well founded—namely, that the resulting processes of repair, as after the use of the ligature, must be secondary and cicatricial. The period of convalescence is painful, and the suffering immediately following the operation is of the same exquisite type as is experienced from burns in any part of the body. As by the ligature, tissues are necessarily destroyed which should be preserved, and considerable portions of the hemorrhoidal plexus, invariably more or less diseased, are not removed.

For a number of years I was an enthusiastic advocate of the clamp and cautery, since it gives a primary wound which is

aseptic, while by the time the slough is ready for separation the subjacent tissues are in a measure protected by the proliferating, granulating tissue. My results were more satisfactory than by the use of the ligature, although secondary hemorrhages have been reported and troublesome cicatricial contraction has been occasionally observed.

It is worthy of our consideration to review briefly the advantages of the once common practice, and still occasionally used, resulting from the injection of certain medicaments into the parts. Carbolic acid was the most often used, since it is in itself an antiseptic, it coagulates rapidly the blood and albuminoids, so that there is little danger of poisoning from its absorption. Variously combined with morphine, cocaine, etc., the injection is accompanied with little suffering. By the use of weak solutions, even after many repetitions of the injections, the hemorrhoidal vessels remain comparatively little changed, and, if strong carbolic acid is used, necrosis supervenes which unfortunately is limited with great difficulty to the pathological structures, owing to the dissemination of the acid into the loose connective tissue.

My friend Dr. H. D. Didama, of Syracuse, N. Y., ingeniously modified this operation with manifest advantage by first including the parts to be operated upon with a provisional ligature.

It is now quite ten years since the method of Mr. Walter Whitehead, of Manchester, England, for the surgical treatment of hemorrhoids, was brought to my attention. It seemed to me to possess very marked advantages over any procedure hitherto recommended, and I adopted it with most satisfactory results. From that time to the present it has been more severely criticised than most other procedures, and often inaccurately described. I presume to recall the most important factors of this operation:

“The bowel having been well emptied on the previous day, the rectum cleansed, and the sphincter dilated, it is easy to observe the line of demarcation between the skin and mucous membrane. Upon this line the section is made until the hemorrhoidal veins are freed from their connective-tissue attachment. These are divided into segments, each segment seized by ring compression forceps, and the dissection continued upward in the cellular plane to the highest limit of the hemorrhoidal growths. Opposite to this the mucous membrane is divided

transversely, leaving the hemorrhoids simply attached by a loose cellular tissue, and the vessels proceeding from above and supplying the mass below." . . . "The hemorrhoids are then twisted and removed, the divided surface of the mucous membrane is drawn down and attached by several fine silk sutures to the denuded border at the verge of the anus." . . . "A contingency that will at once suggest itself to the minds of those who read this description is the risk of stricture likely to follow the cicatrix resulting from this plan of operation. I may mention that, however, wherever it is feasible, with strict regard to removing every evidence of any hemorrhoidal growth, I invariably leave longitudinal strips of mucous membrane continuous with the skin; but in severe cases, requiring the removal of the entire circumference, I have no fear of the bowel being inconveniently contracted when mucous membrane alone is sacrificed, and believe that undue contractions only take place when annular cicatrix is formed at the expense of integument. I have taken great pains to ascertain that this fear is groundless, and I have watched most of my cases for a sufficient length of time to relieve my mind from any further anxiety on this point; at the same time I fully realize that the progress of such contractions is slow."¹

In a further contribution² Mr. Whitehead emphasizes the advantages of the operation described in his previous contribution, and the criticisms which followed its discussion were for the most part favorable.

Dr. Kelsey,³ of New York, criticised Mr. Whitehead's method "as a naturally difficult, tedious, and bloody operation," and that no essential change had been made in the guiding principle. At that time Dr. Kelsey appeared never to have performed the Whitehead operation and expressed a distinct preference for the clamp and cautery. I have recently been informed that he has discarded the cautery and at present believes in the use of the ligature.

Mr. Whitehead⁴ made emphatic answer to Dr. Kelsey's paper. To the charge that his operation is difficult, Mr. White-

¹ "The Surgical Treatment of Hemorrhoids," British Medical Journal, February 4th, 1882.

² British Medical Journal, February 26th, 1887.

³ New York Medical Journal, December 8th, 1888.

⁴ New York Medical Journal, February 23d, 1889

head replies "that young surgeons have repeatedly assured him that they do not find the operation difficult, and that he is satisfied that it is an operation which can easily be performed by any surgeon possessing average skill and intelligence"; that it is tedious, he declares "that in an average case it can be completed in ten minutes"; that it is bloody, he states "that it is never excessive; hemorrhage such as I meet with may well take a subordinate position to other and more important considerations involved in the operation."¹

Mr. Whitehead's experience at this date included three hundred cases of operation—certainly sufficiently ample from which to make deductions, and which entitle his opinions as worthy of the highest consideration and respect.

It is more than fifteen years since I operated upon two cases of prolapsed rectum by first, before resection, entirely encircling the prolapsed parts with a row of continuous, double, tendon sutures. From the good result obtained in these I was led to apply the same method in suturing the ring of dilated hemorrhoidal vessels before resection. Since, this method has entirely superseded all others in my practice, and it has been demonstrated by operating in the presence of many surgeons, always with distinct approval. My first publication upon the subject is found in the *Journal of the American Medical Association*, July 21st, 1888.¹

Although I am distinctly indebted to Mr. Whitehead for his most valuable paper, I cannot but think my method of suturing and closure is worthy of consideration and adoption. For this reason I may be pardoned, for the guidance of those less experienced, in presenting the same somewhat in detail.

It is important that the alimentary canal receive attention for a day or two prior to the operation; that the lower bowel be carefully emptied by a cathartic the day previous and the morning of the operation; that the rectum be cleansed by a large enema, the diet for a few days having been restricted chiefly to fluids. The patient, having been etherized, is retained in the lithotomy position by means of the Clover crutch, and the parts are protected by the inflated rubber irrigation pad. It is of the first importance slowly and carefully to paralyze the sphincter by a thorough dilatation of it. The lower segment of the rec-

¹ "The Cure of Hemorrhoids by Excision and the Closure with the Buried Animal Suture," *Annals of Surgery*, November, 1889

tum is then carefully cleansed by irrigating with a solution of bichloride of mercury (1:2000), followed by sterilized water. A loose wool pad of fist size, into which iodoform has been freely incorporated, is now introduced into the rectum, leaving a string for its withdrawal. Under a good light it is easy to follow the line of demarcation between the skin and mucous membrane. It will be found usually that the hemorrhoidal tumor is of much larger dimension than was previously supposed, and that it lies easily everted upon the external border of the sphincter muscle.

With a pair of sharp-pointed, curved scissors or knife, the parts being steadied by two fingers in the rectum, it is easy to follow the line of demarcation and divide, from behind forward, upon either side, to the anterior median line. It will generally be found that the loose connective tissue is easily separated, with very little bleeding, until the external border of the sphincter is clearly brought into view. This is usually the upper border of the hemorrhoidal plexus, and, if it extends higher, the dilated vessels are easily traced to their bases, generally by pressure of the scissors or some blunt instrument. The base is encircled with a double line of continuous tendon sutures, so taken as not to penetrate through the mucous membrane. The vessels are now divided at the base, and so much of the mucous membrane as is not diseased dissected free before division. Lastly the mucous membrane is divided transversely, and the entire ring of hemorrhoidal vessels is thus removed. It will now be observed that the external fibres of the sphincter are uncovered, lying at the base of two shallow circular flaps. These are approximated by a single continuous tendon suture, the stitches taken just within the divided edges, parallel to the flaps, each succeeding stitch entering directly opposite the emergence of the previous stitch. Tension upon this coaptates the parts without puckering, covers the sphincter, and leaves only a comparatively slight wound of unclosed structures. A second row of suturing, taken just within these divided edges, in the same way, by tension upon the suture, completely approximates the skin and mucous membrane and buries it entirely from vision. The line of union is covered with a seal of iodoform-collodion, reinforced with a few fibres of cotton, and the operation is complete.

It may be done much more rapidly than this description

would seem to imply, ten minutes being often ample for the operation. It is comparatively bloodless, because the vessels are occluded before division. It is important that the sphincter be completely paralyzed, since this muscle should be for some days without functional activity in order to lessen pain and promote rapid union. The wool tampon had better be removed about the third day. It is well to adjust a small pledget of cotton or gauze as an anchor to the distal end of the string, since occasionally the wool pad may be drawn up the bowel.

The advantages of this method of operation are apparent. By the dissection as practised by Mr. Whitehead, *only the diseased structures* are removed and the remaining parts are left in an undevitalized, clean condition. This is in accord with the rules of surgery which apply almost without exception to other parts of the body, and it seems an anomaly that this portion of the body should be beyond the pale of modern surgical procedure. Although all surgeons are well aware that wounds of the anal outlet are liable to infection, yet the experience is abundant to demonstrate that the majority of such wounds can be *made and maintained aseptic*, undergoing, as elsewhere, primary union.

When primary union is secured the recovery is, as elsewhere, rapid and the suffering is minimized. The lower bowel is in a large measure protected by the iodoform wool. The wound having been made and maintained aseptic during the dissection and closure of the parts, the protection from the collodion seal is ample for a short period. This must be kept under observation much more closely than when used for the protection of wounds through cutaneous surfaces. It is surprising to note the rapid cell proliferation which ensues in an aseptic wound at rest, thereby protecting the injured tissues. Two or three days place such a wound almost beyond danger. To this end, as also to prevent suffering, it is of the first importance to paralyze completely the sphincter and with the *minimum of injury*.

As might be inferred, the results obtained, when the operation has been thus properly executed, are not alone excellent, but are much superior to those following the use of the clamp and cautery or the ligature. Primary union always minimizes cicatricial structures. Even when suppuration ensues after a clean dissection, the tissues are on this account so much the less devitalized that they are better able to resist the invasion of

bacteria, and the vessels have been occluded by the sutures so that hemorrhage does not occur.

It is six years since my last publication upon this subject, and my own large experience during this period more than justifies all that I then wrote in favor of this modification of the operation presented to the profession by Mr. Whitehead.

I consider it so simple and effectual that I am in the frequent habit of adding this operation to the list of the operations for the restoration of the pelvic structures in woman, where hemorrhoids are such a frequent complication—*e.g.*, curetting, repair of the cervix, colporrhaphy, perineal reconstruction, all at a single sitting.

Cases vary in severity, and in like manner do the conditions of ease and rapidity of repair and restoration of function. The nervous reflexes, which enter so often as a prominent factor into the suffering caused by hemorrhoids, are often slow to disappear as after other operations. "Remove the cause of the irritation and trust that the irritation will disappear" is an old maxim accredited to Dr. Watson, the author of the "Practice of Medicine" so familiar to our earlier days, given by him as advice in a celebrated consultation to Sir Benjamin Brodie.

This paper has been written because of a review recently published¹ of the Whitehead operation by my friend Dr. E. Andrews, of Chicago. It is very evident that Dr. Andrews has been prompted to do this because of the wretched results which he has had under observation, the outcome of work performed by ignorant pretenders styled by him "certain persons calling themselves orificial surgeons." It is, however, but charitable to believe that, in his zeal to protest against such infamous imposition, the good doctor has failed to discriminate between these practices and the skilful performance of a well-advised surgical operation. Indeed, I greatly fear that he has never investigated the subject in a true judicial spirit, and it is very probable that he has never attempted the dissection and excision of the greatly enlarged and deformed hemorrhoidal plexus of vessels. Certainly he misinterprets Mr. Whitehead and greatly exaggerates the extent of the operation in his accompanying illustrations. Done as depicted, what he calls "a thorough Whitehead" would result "in great and irreparable mischief."

¹ Fort Wayne Medical Magazine, July, 1895.

The object of surgery is to *save* and not to *destroy*; to remove *pathological*, not *healthy* structures; and this is the very end and purpose of the dissection method, in marked contrast with the operations still so generally advocated, where, indiscriminately, the presenting masses are destroyed by ligature or cauterization. In the earlier part of this paper I have emphasized the active part which the sphincter takes in producing the ectasic condition of the vessels, and given quotations from Mr. Whitehead's published articles to show the proper limit of the advised dissection. It is easy to determine the upper limit of the parts to be removed.

After the complete dilatation of the sphincter the ectasic plexus of vessels lies really external and presents as a rosette of greater or less size, with the line of the skin marking the outer border of the tumor. Only the redundant mucous membrane is removed, which has become as truly pathological as the vessels themselves.

"The important tactile organs connected with the special rectal sense" are properly *never* removed. The mucous membrane is *never* to be pulled down by *force*, nor in any instance should there be the slightest reason why, from tension, the stitches taken by my method should give way.

The last objection made by Dr. Andrews is the danger from septic infection, which, he admits, "in Whitehead's method is not very great, but is something."

The great advances made in modern surgery are in large part the ability to secure primary union in coaptated aseptic structures. These methods have caused the condemnation and abandonment of constricting by the ligature vitalized structures for the purpose of necrosis, and the use of the cauterization, where follows of necessity the slow healing of an open wound. It would indeed be strange if the anal structures were the only exception.

Dr. Andrews is to be commended for his extensive research after disasters. Statistics have their value, often very great value, but it may be remarked that they serve an especially useful purpose to bolster up a preconceived premise.

Let us briefly analyze Dr. Andrews' table. Gathered from correspondence, he finds two hundred and one cases where ill results have followed the *so-called* Whitehead operation. The methods employed under this designation are not described;

even the names of the operators are not given. The number of operations is omitted; no percentages are possible, and any analysis must be very unsatisfactory.

Dr. Andrews, however, states that, if the Whitehead operation is thoroughly performed, the whole tactile mechanism is swept away and nearly all tactile special sense is removed. Thus, according to Dr. Andrews' definition, these bad operations have been very imperfectly performed, since in less than four per cent of his defective cases has this result been observed.

Another ill effect which it is claimed must result from this dissection is the loss of the reflex mechanism and consequent incontinence of feces. This is by far the most serious charge, and the number of cases reported is twenty-seven. But is it not far more likely that this has resulted from some injury to the sphincter? Certainly it is not properly involved in a correct dissection of the parts, and has never occurred in my experience.

Nine cases of stricture are reported, a result which ought to follow as the rule if thoroughly done as described—according to Dr. Andrews' reverse order of reading, ninety-five per cent of failures because stricture did *not* supervene. According to his own conclusions sixty per cent of the entire list is of little value because without accurate description. Most of the operators quoted as opposing the dissection method have never performed the operation.

What we really need is the evidence which alone can come from honest, judicial, capable surgeons who have carefully dissected and removed only the *pathological structures* with *aseptic primary* closure. These witnesses, giving an analysis of their experience, would furnish evidence of a crucial character.

It is now futile for those who have never operated to condemn this method as unsurgical and unscientific, unless, indeed, they can exhibit bad results of cases operated upon by men of acknowledged ability and in strict adherence to the detailed description of the method.

My own experience in this operation extends over a period of twelve years of practice, with a large list of cases and of every variety. A statistical table at this writing is impossible, but I am assured that the operation, as I have performed it, is so exceptionally satisfactory in results that I heartily commend it to the favorable consideration of all surgeons. I have never seen a case where the patient seemed to approach the danger line. The

subsequent suffering is very much less than by other methods, the recovery more rapid, and the results far more satisfactory. I commend to Dr. Andrews, as a surgeon of national repute, that he give this method a fair trial, with the assurance that at some subsequent period we shall have a reversal of his present verdict upon an operation of great importance to an army of daily sufferers.

180 COMMONWEALTH AVENUE.

