

Non-Operative Treatment of Internal Hemorrhoids

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HEMORRHOIDS have attracted the interest of man since the beginning of history, as evidenced by numerous references to this affliction in the Bible and in the earliest recorded literature. Hippocrates, the Father of Medicine, recognized the disease and suggested measures for its alleviation. The disciples of the Arabian school of medicine and the Italian medical centres of the Middle Ages also were cognizant of the problem.

The reasons for the interest of the general public are the accessibility of the discomfort-producing area and the widespread incidence of the condition. The exact frequency is not known. Buie¹ at the Mayo Clinic stated that 52% of the patients entering that institution have hemorrhoids. The exact figure probably reaches 75% of the adult population. There are relatively few individuals in the general population that have not at one time or another suffered the discomfort produced by internal hemorrhoids and there scarcely exists a family in which one or more members have not been plagued by this complaint.

CLASSIFICATION

There are three main classes of hemorrhoids: external, internal and mixed. External hemorrhoids appear in the perianal tissues, are covered by squamous epithelium, and are due to dilatation of veins connected with the systemic venous system. Internal hemorrhoids, on the other hand, are due to dilatation of veins draining into the portal venous system. The latter have their origin superior to the anal canal and are covered by columnar epithelium. There is a venous connecting channel between these two groups; therefore when this internal group enlarges and prolapses, the external group usually increases in size also. This confluence of the two primary groups is classified as the mixed or combined internal and external group.

Internal hemorrhoids are described as follows: Degree I—confined to rectum; Degree II—prolapse on straining; Degree III—continuously prolapsed.

LOCATION OF INTERNAL HEMORRHOIDS

Internal hemorrhoids correspond to the location of the rectal venous trunks. The convexity of the rectum on the right side provides a larger area to be drained than the concave left side; therefore, there are two primary hemorrhoidal groups on the right, the right posterior at the two o'clock position and the right anterior at the five o'clock position. The left side consequently has only one primary

ABSTRACT

It has been estimated that about one-half of the adult population has internal hemorrhoids. While the majority of these experience relatively few symptoms, a considerable number continue to suffer discomfort because of unwillingness or inability to accept the expense and loss of time necessitated by operation. Ligation by elastic ligatures of certain selected groups of internal hemorrhoids is an alternative procedure which can be done easily by the doctor in his office with minimal distress to the patient. A special instrument devised by Blaisdell and modified by Barron is required. The experience gained in the ligation treatment of 400 patients with internal hemorrhoids is the basis of this report.

group, the left lateral, which occupies the nine o'clock position. Two smaller secondary groups are frequently present, one at the anterior commissure and one at the posterior commissure.

CLINICAL FEATURES

Anorectal discomfort, bleeding and prolapse are the outstanding symptoms of internal hemorrhoids. Acute pain, except in the presence of thrombosis, is rare. When the chief complaint is pain, there is usually some associated condition such as abscess, fissure or acute cryptitis complicating the hemorrhoids. Discomfort is manifested by perianal itching, persistent moisture due to mucous secretion and the problem created by a difficulty in maintaining anal hygiene.

REASON FOR DEFERRING TREATMENT

Excessive modesty, extravagant claims and availability of advertised products for relief, and the activity of irregular practitioners of medicine, all contribute to delay in obtaining adequate treatment. The patient with hemorrhoids often does not fare much better when he consults his doctor, who often is reluctant to make a complete examination or is incapable of doing so. The unfortunate victim frequently receives a diagnosis of hemorrhoids regardless of the pathologic condition and is sent on his way with a box of ointment, even though he may be harbouring a malignant growth. A cursory examination followed by hemorrhoidectomy may be even worse, since there is statistical evidence to show that in 25% of patients undergoing hemor-

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roid removal there is a malignant growth within reach of the examining finger or visible on low proctoscopic examination.⁷ Finally, perhaps the most important reason that many patients hesitate to accept the advice of their doctor and refuse to submit to hemorrhoidectomy is the evil repute of the operation. This reluctance persists in spite of improved operative techniques and postoperative care which result in a very low incidence of post-operative bleeding and prolonged discomfort due to delayed healing. Nevertheless, it must be admitted that operative intervention is followed by a varying period of acute discomfort which cannot be eliminated entirely, even by the newer pain-relieving remedies.

by repeated treatments hemorrhoids can be kept under control for long periods of time.

2. *Ligature—office treatment.*—The office treatment of hemorrhoids by ligature has received great impetus from the work of Blaisdell,³ whose ingenious drum instrument has greatly simplified the problem. Originally Blaisdell employed silk as the ligating medium, but later changed to elastic ligatures. The Barron innovation consists in the use of small-calibre elastic bands designated as Latex O rings. The method of loading the elastic band on the drum has been adopted from the principle used by Gravlee and Jones⁴ in their device for tying the umbilical cord. The Barron instrument⁵ is a modification of the basic concepts of Blaisdell³ and

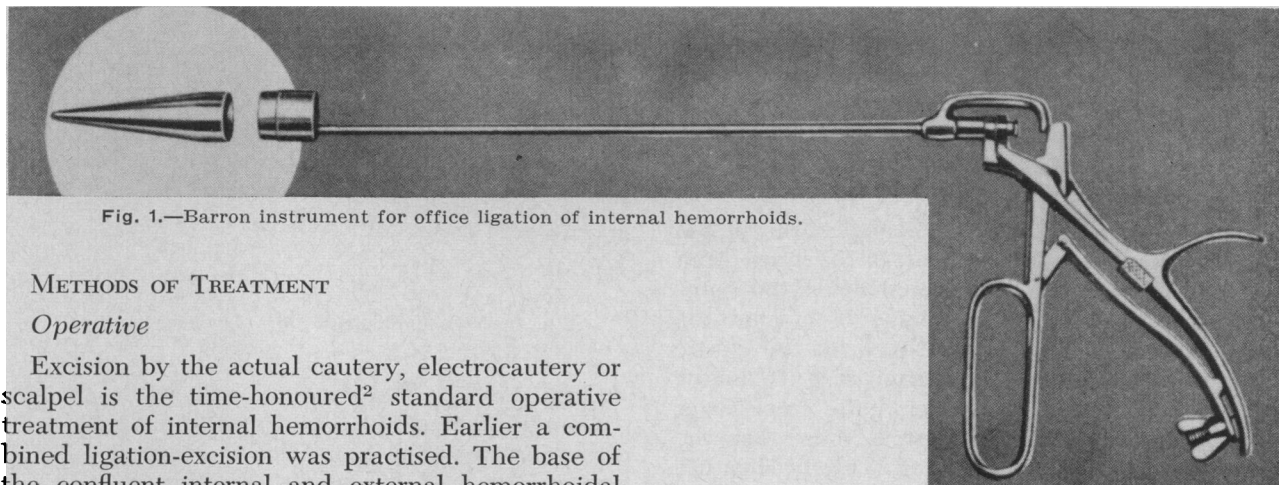


Fig. 1.—Barron instrument for office ligation of internal hemorrhoids.

METHODS OF TREATMENT

Operative

Excision by the actual cautery, electrocautery or scalpel is the time-honoured² standard operative treatment of internal hemorrhoids. Earlier a combined ligation-excision was practised. The base of the confluent internal and external hemorrhoidal mass is developed by sharp scalpel dissection and the pedicle is then ligated tightly with a stout silk ligature. The frequent complication of hemorrhage at the time of separation caused this method to fall into disrepute. The Whitehead operation consists in removing a cuff of lower rectal mucosa including all the hemorrhoids and then uniting the mucosa of the rectum to the skin margin. When healing is complete, areas of protruding mucosa continue to secrete mucus. This persistent moisture plus loss of sensation in the anal canal is the basis of objection to this operation.

Non-Operative

Non-cutting methods of treatment for hemorrhoids have a tremendous patient appeal not only from the economic point of view but, more important, because they avoid postoperative distress and the relatively prolonged period of perineal discomfort that follows surgical removal.

1. *Injection.*—Injection of sclerosing agents either directly into the hemorrhoid or peri-hemorrhoidal tissues is an excellent palliative method of dealing with acute bleeding or in patients whose general condition does not permit more radical treatment, and in those patients who for economic or personal reasons cannot spare the time or the funds for hospitalization. Injections are rarely curative, but

Gravlee⁴ combined in a single unit. The elastic ligature produces continuous unyielding pressure on the vascular hemorrhoidal tissue and is maintained until sloughing takes place in from seven to 10 days. Hemorrhage⁶ which sometimes follows the use of the silk ligature is obviated, since even the smallest vessels in the pedicle are compressed until the moment of separation of the hemorrhoid from the rectal mucosa. The area from which the hemorrhoid separates is represented by a narrow granulating area which heals completely in a few days without evidence of stricture. The ligature can be applied without discomfort to the patient, provided that the tissue in the grasp of the ligature is confined to the rectal mucosa covered by columnar epithelium. Great care must be exercised not to include either the transitional or squamous epithelium of the anal canal which is abundantly supplied with pain fibres, in contrast to the rectal mucosa which is insensitive.

EQUIPMENT NECESSARY

The Barron instrument (Fig. 1) consists of two open-ended metal drums, one enclosed within the other. The inner drum is mounted on a solid shaft attached to the rigid portion of a pistol grip handle and the outer one is mounted on a hollow shaft

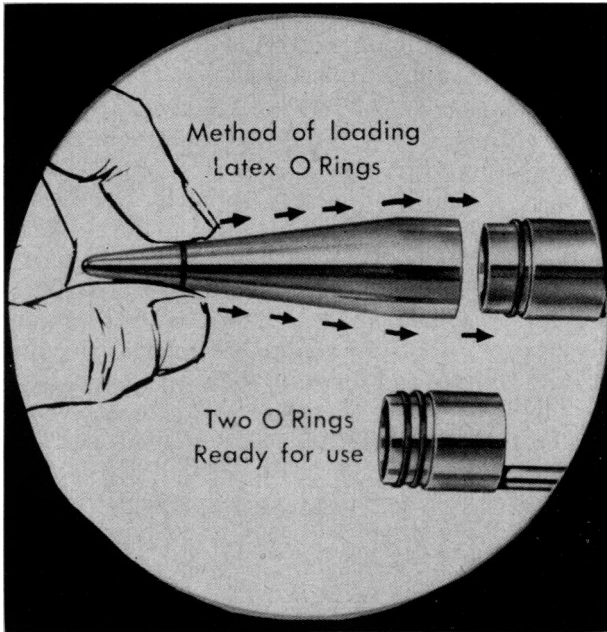


Fig. 2.—Loading device.

which is attached to the trigger mechanism of the pistol grip handle. The solid shaft of the inner drum is contained within the hollow shaft of the outer drum. The inner drum extends $\frac{1}{2}$ " beyond the outer and functions as a repository for the elastic ligature. The movable outer drum and its hollow shaft, controlled by the trigger, glide freely over the inner drum and its rigid staff; thus when the trigger mechanism is pressed the elastic ligature is pushed off the inner drum and drops into the

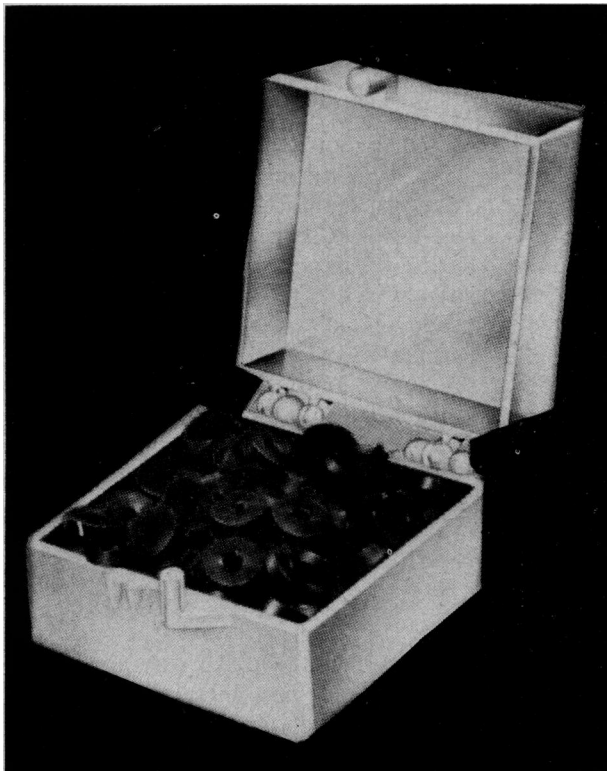


Fig. 3.—Elastic ligatures.

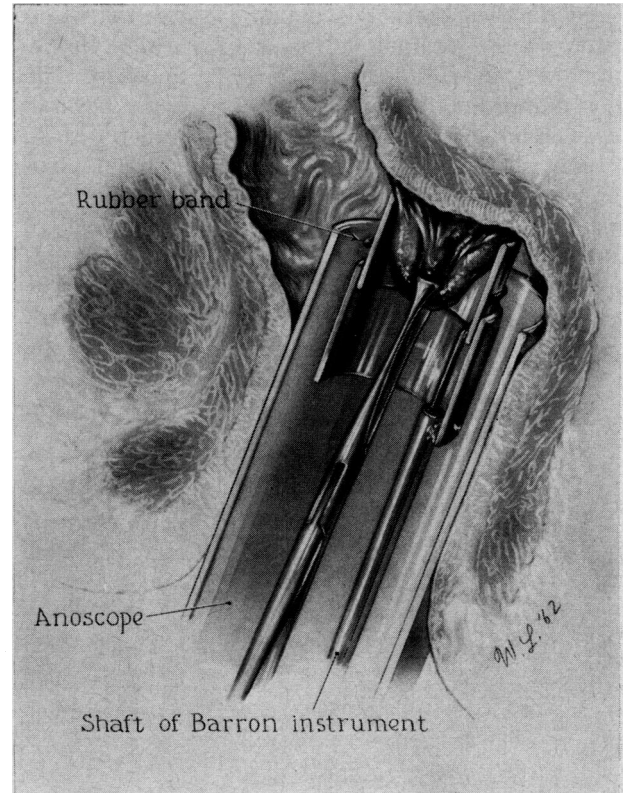


Fig. 4.—Method of application of rubber ligature.

desired position. The handle is detachable, so that a change of drums can be quickly made. Longer shafts are available for use in removing rectal polyps. The ligature-loading apparatus (Fig. 2) is a hollow cone-shaped device with a pointed end and an inner flanged base that fits the distal end of the inner drum in such a fashion that the narrow $\frac{1}{16}$ "-lumen elastic rubber band (Fig. 3) can be advanced over the cone until it rests in place on the drum. Two ligatures should be used as a precautionary measure against breaking of one of them. The instrument can be used only with a short, lighted anoscope of 70-mm. length and a terminal diameter of 20 mm. Black Latex rubber ligature rings are advisable, since if pain is produced by the inadvertent inclusion of sensitive transitional epithelium the black rubber is readily recognized and easily removed. Ordinary Allis forceps are adequate for grasping the hemorrhoid, but if polyps are being ligated a special long-grasping clamp is necessary (Fig. 4).

PREPARATION OF THE PATIENT

It is extremely important to correct constipation before ligating hemorrhoids in order to ensure the passage of only soft stools. It is our practice to begin the use of stool softeners such as Doxinate,[®] Colace,[®] Doss,[®] etc., during the week prior to commencing ligation and to continue their administration until treatment is completed. Although very few patients will experience distress at the time of ligation, about 25% of them will have minimal

discomfort during the first 24 hours. It is prudent, therefore, to prescribe dextro propoxyphene (Darvon) compound or Empirin® compound, to be taken as the necessity arises. The patient should be thoroughly informed as to the nature of the treatment and reassured that it will be painless and that the hemorrhoid will separate in from seven to 10 days without danger of hemorrhage. Occasionally a very apprehensive individual may require mild sedation before treatment.

SELECTION OF PATIENTS FOR LIGATION

Treatment of hemorrhoids should never be undertaken without a complete anoscopic, proctoscopic and barium enema examination to exclude the possibility of an associated malignant lesion. It is also essential to determine that the symptoms of which the patient complains actually are due to hemorrhoids. The classic symptoms of hemorrhoids are bleeding and prolapse, but acute pain in the absence of thrombosis is rare. Therefore, special care must be taken when pain is the chief complaint, for even though hemorrhoids are present they may not be the cause of the pain. Careful scrutiny is necessary in order to be certain that an anal fissure or an incipient abscess is not present, for treating the hemorrhoids in this event will not relieve the pain and a dissatisfied patient will be the result. The method is ideal for treatment of internal hemorrhoids which bleed or prolapse. Confluent internal and external hemorrhoids may be successfully treated by ligating only their internal component. It is very important in these cases to avoid including in the ligation any of the transitional epithelium of the anal canal, for inclusion of even a small segment will produce pain when the ligature is applied. Hemorrhoids recurring after operation are eminently suitable for ligation treatment, since most patients who have experienced the discomfort of surgical excision are loathe to submit to reoperation. Minor degrees of rectal prolapse with or without hemorrhoids can be improved by ligating multiple segments of redundant mucosa. Subsequent ligations should be performed only after the previously ligated area is completely healed, to avoid undue narrowing of the rectum. Ligation is not advised in the presence of acute anorectal infections such as acute cryptitis, abscesses, thrombosed external hemorrhoids, fissure-in-ano and fistula-in-ano. Pectenosis is also a contra-indication, but ligation may be done after the pectenosis is corrected.

TECHNIQUE OF LIGATION

Position of Patient

The inverted position is preferable to the lithotomy position because with the latter it is easy to overestimate the amount of redundant hemorrhoidal tissue and destroy more mucosa than is necessary. A special rectal table, though convenient,

is not necessary, since the knee-chest position is entirely satisfactory. Elderly patients and those weakened by disease can be treated in the lateral recumbent position.

ANESTHESIA

No anesthesia is necessary for the treatment of internal hemorrhoids because the ligature when properly applied includes only insensitive rectal mucosa.

APPLICATION OF THE LIGATURE

The anal canal is gently dilated with the lubricated forefinger of the surgeon before inserting a short 70-mm, lighted anoscope. Since only one hemorrhoid at a time should be treated, it is usual to select the one that is bleeding or the one that prolapses most. The surgeon introduces the ligating drum through the anoscope maintained in place by an assistant (Fig. 4). The selected hemorrhoid is grasped by an Allis clamp and pulled through the drum, great care being taken not to include tissue covered by transitional or squamous epithelium. The trigger mechanism is pressed and the elastic ligature drops into place at the base of the hemorrhoidal mass, which immediately takes on a purple discoloration. The whole procedure requires only two or three minutes, and the great majority of patients are unaware that anything has been done.

RESULTS OF TREATMENT

The following observations have been made on over 400 patients whose hemorrhoids have been treated by ligation as an office procedure.

Pain.—When there is no complaint of discomfort at the time of ligation, it is unlikely that it will develop later. Twenty per cent of our patients experienced a feeling of uneasiness in the anorectal area following the first ligation and took one or two pain-relieving capsules such as dextro propoxyphene (Darvon) or Empirin® compound but needed no medication at subsequent ligations. Ten per cent demanded more than two capsules but 70% required no medication whatever.

Hemorrhage.—The ligated hemorrhoid becomes necrotic in from 24 to 48 hours and sloughs in from seven to 10 days. The stools must be kept soft during this period. Only one patient had bleeding from the ligature site and three additional patients had to be treated for bleeding from remaining unligated hemorrhoids.

Hospitalization.—There were no admissions to hospital because of bleeding from the ligature site. Three patients required hospitalization during the course of treatment, two because of bleeding from unligated hemorrhoids, the third patient who bled was found to be suffering from a bleeding duodenal ulcer.

Loss of time from work.—Only 5% of the patients absented themselves from work following ligation. The majority of these were tense, nervous, apprehensive individuals. The average loss of time for this group was two days.

External hemorrhoidal tags.—Ligation of the internal component of confluent internal and external hemorrhoids has been followed invariably by a reduction in size of the external component. The external tags do not disappear entirely, but in only 5% of the patients was it necessary to remove the excess skin. This was carried out in all cases as an office procedure performed under local anesthesia.

Stricture.—None of the patients developed anal stricture as a result of the ligation.

Interval between ligations.—Only one hemorrhoid should be ligated at a time. As sloughing may take as long as 10 days, a 10-day interval between ligations is advisable. The number of ligations varies with the severity of the condition, and usually from three to five ligations are necessary. The average in our series was 3.6 ligations per patient.

The advantages of ligation are that: the procedure is practically painless; no expensive hospitalization is required; there is no loss of time from work; there is almost no danger of hemorrhage; and patients willingly submit to the procedure.

COMMENTS

It is not suggested that office ligation is the treatment of choice for all hemorrhoids, for, as pointed out by the distinguished members of the panel at the May 1962 meeting of the American Proctologic Society held in Miami, Florida, there is a place for injection, for office ligation, for the classic hemorrhoidectomy and for the present-day modification of the Whitehead operation.

Simplicity of design and ease of manipulation are outstanding features of the Barron instrument.

The enthusiastic approval of patients is based on obtaining relief from the discomfort of hemorrhoids by a method which is not painful and does not entail either hospitalization or loss of time from work.

Experience gained in treating more than 400 patients has heightened our respect and enthusiasm for the method.

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PAGES OUT OF THE PAST: FROM THE JOURNAL OF FIFTY YEARS AGO

THE HARDEST NUTS TO CRACK

Sir William B. Leishman said the treatment of typhoid fever was beyond the experimental stage, and the treatment of cases of enteric by typhoid vaccine was thoroughly scientific and he strongly advocated its use. One should start with an initial dose of two hundred million of the ordinary prophylactic vaccine and repeat the dose on the third occasion to say five hundred million. A smaller dose would have no effect. The treatment is harmless and scientific and is the most promising treatment in typhoid yet known.

As to the application of typhoid vaccine in civil life, Sir William spoke as follows: "It seems to me that, if we control typhoid in the army in peace, and we hope to do so in the future in war, you in civil life should not hold your hands from the benefit of such typhoid vaccination, especially if you are threatened or exposed to typhoid in your immediate surroundings. Measures of protection against typhoid, such as improved water supply, an improved sanitation generally, instruction of the people as to the care necessary to prevent this disease, are all excellent aids but do not take the place of typhoid inoculation. This vaccine is a very simple thing to prepare. I have had brought to my notice in several ways during the few days spent in Canada that you suffer largely from typhoid in this country. For example, Ottawa has had a severe epidemic and typhoid is at large in various parts of your country districts. If you could organize a campaign against typhoid to persuade people likely to be exposed to infection to be inoculated, you would be doing great good to this country and to

science in general, and in that way accumulate information that would convince every one. I was bold enough at Montreal the other day to suggest that the authorities should vaccinate the whole population. That seemed a tall order, but I do not see why it should not be done. We do not know when we may catch typhoid ourselves, why throw away the chance of preventing such an occurrence. Thinking over the matter from that point of view, you will have three sets of people to convince. First and most important, yourselves, for it is your business to convince the second set, the authorities, and thirdly, the people you are going to inoculate. The authorities are the hardest nuts to crack. You may have trouble with them, but not with the people. The latter are extraordinarily amenable to the influence of the medical man whom they trust. If you are convinced and believe typhoid inoculation is a good thing, it will do you no harm if you inoculate yourselves except to cause a sore spot or a sore head for a day or so. If you inoculate yourselves very few people will refuse inoculation when it comes to their turn. Of course there is a prejudice against this form of treatment, as there is against vaccination for smallpox, but these prejudices vanish in the presence of danger. When the relatives and children are contracting enteric their friends will fly to you and you will have no difficulty to get them to accept treatment. I believe personally most strongly in the benefits to be derived from this method of treatment and, if I may give you advice, should urge you to use it to the utmost as an aid to the weapons which you employ in fighting the disease."—*Canad. Med. Ass. J.*, 4: 368, 1914.