

## Band Ligation of Internal Hemorrhoids

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Band ligation of protruding internal hemorrhoids is a safe, effective method for obliteration of symptoms in carefully selected patients. The family physician may rather easily learn the indications and technique for the procedure, and thereby help the patient avoid the pain, disability, and expense of conventional hemorrhoidectomy.

Two hundred consecutive patients treated by banding are discussed. Many require more than one procedure, spaced at least three weeks apart, with cessation of symptoms being the end-point for treatment. Band ligation is an office technique, done without need for anesthesia, and results in less than 48 hours disability. Excellent or good results occur in 97 percent of patients treated, with a complication rate of five percent.

Important factors to remember in contemplating band ligation are (1) ensuring the absence of other colorectal disease, (2) properly selecting the patient, (3) having adequate assistance and equipment, and (4) preventing and/or treating the few patients who develop a complication.

Symptomatic hemorrhoidal disease is one of the first conditions mentioned in medical history, with reports dating back over 4,000 years. Many surgical procedures designed to alleviate the problem have been in favor at various times, but the known complications, especially postoperative pain and prolonged disability, have obliged physicians to examine alternatives.

Office procedures for symptomatic hemorrhoids have been reported extensively in the lay press. Public knowledge demands physician awareness of the alternatives to surgery available. The practitioner should know indications for different types of hemorrhoidal care, including sclerosing injections, cryosurgery, band ligation

and formal hemorrhoidectomy. It is emphasized that the majority of patients initially seen for hemorrhoidal symptoms need *none* of these procedures. Adding bulk and softening to the stool along with advising proper habits will stop most complaints in time. An important habit to be encouraged is a shortened "commode time" to less than two minutes, not allowing the dependent and tourniquet effects of the toilet to dilate and rupture anal veins.

In 1958 Blaisdell<sup>1</sup> described an instrument for outpatient ligation of hemorrhoids. Four years previously, the instrument had been shown through a scientific exhibit at the American Medical Association convention in San Francisco. The initial ligation material was silk, but experience has shown that elastic bands result in less difficulty from delayed bleeding. Barron<sup>2</sup> modified the instrument, and in 1963 reported on the

technical factors important in hemorrhoidal band ligation. The "Barron Ligator" is now used extensively throughout the country.

### Selecting the Patient

Many people with internal hemorrhoids seek medical attention. The most common symptom, bright red rectal bleeding at the time of defecation, brings the fear of malignancy to many. The *most important* aspect of rectal bleeding is to prove its source, and sigmoidoscopy for all patients is obligatory. Personal preference is for examination without preparation, ideally as close to the time of bleeding as possible. An enema will wash away blood and produce mucus, two important clues to higher disease. Barium enema is a common but not routinely ordered evaluation. A patient who notes blood on the toilet tissue only does not require a barium enema, providing there are no abdominal symptoms and no change in bowel habit, and providing sigmoidoscopy is normal with the exception of visibly eroded internal hemorrhoids.

Internal hemorrhoidal veins lie under the distal rectal mucosa, from the mucocutaneous junction proximally for 2 or 3 cm. They are best visualized by anoscopy, with a side-viewing anoscope ideal to see and treat individual quadrants. Three primary hemorrhoidal locations are fairly constant, with two on the right in an anterior and posterior position, and the third in a left lateral location. Internal hemorrhoids that bleed but do not protrude are well managed conservatively as described, or by sclerosing injections if bleeding persists.

The indication for band ligation is

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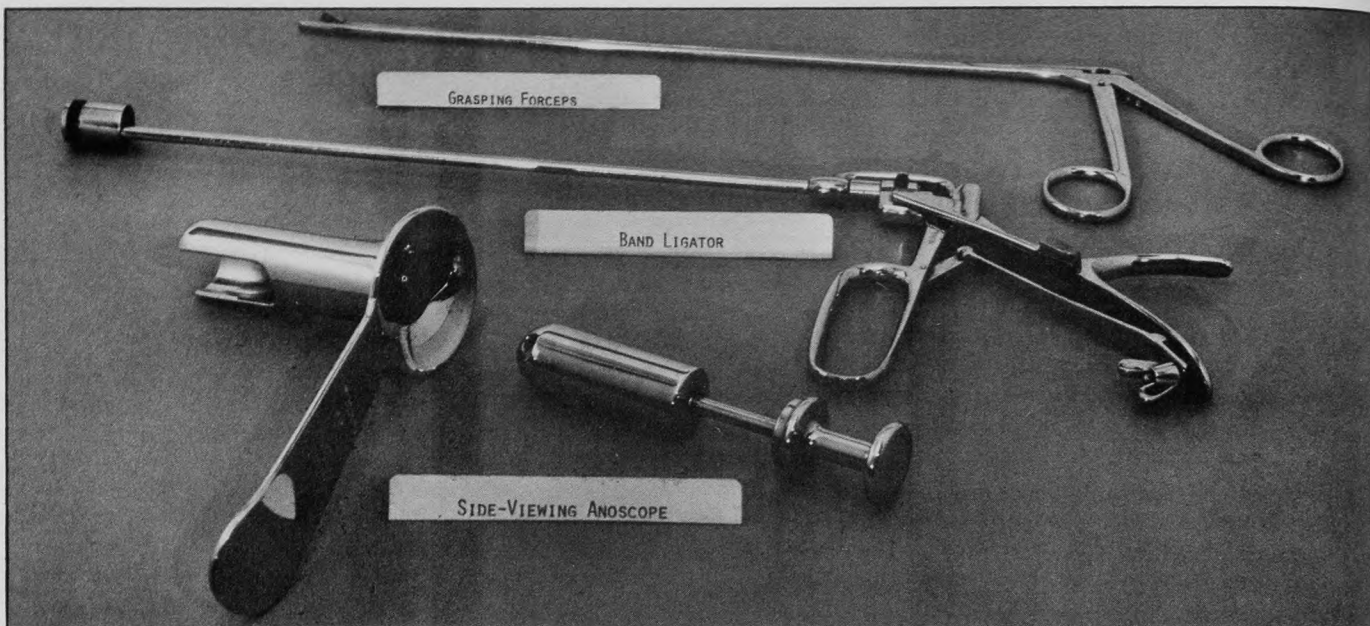


Figure 1.

protruding hemorrhoidal veins, although massive protrusion may be better treated by cryosurgery or operation. A patient who states he notes "tissue coming out" has protrusion, but the physician may not be able to confirm the problem unless he makes a point of having the patient strain in the lateral position. If this fails to demonstrate protrusion, squatting in the examining room or sitting on the commode will bring any pathology into view.

#### Technique of Band Ligation

The list below contains everything necessary to satisfactorily ligate large internal hemorrhoids:

1. Gentle technique, advising the patient of each step in advance
2. A relaxed, cooperative patient
3. Ample lubricant
4. Side-viewing anoscope (Hirschman, McKinney, or similar instrument)
5. Hemorrhoidal ligator
6. Grasping forceps
7. Good lighting
8. An assistant

The anoscope, ligator, and forceps can be purchased for less than \$350 from a surgical supply house. (See Figure 1.)

The patient is positioned on his

side, in the left lateral Sim's position if the physician is right-handed. The patient's upper leg is flexed toward the abdomen and "crossed over" the down leg.

The anal canal is lubricated with a water soluble lubricant, the patient being told of each maneuver in advance. No anesthetic is warranted.

The anoscope is inserted as far as possible, with the slot in the instrument in the direction of the proposed ligation. It is simple to comfortably withdraw the instrument a little after the insert (obturator) is removed. The tissue to be ligated bulges into the slot of the anoscope. After the instrument is properly positioned, the assistant holds it firmly in place. The assistant also adjusts lighting as needed. Bright flashlights work well, as does the light detached from a fiberoptic sigmoidoscope.

The physician, seated or standing, holds the hemorrhoidal ligator in one hand, the grasping forceps in the other. The grasping forceps is placed through the cylinder of the ligator, and the proposed site of ligation compressed by the forceps. Severe discomfort by this test means the bands will hurt in this location, and must be placed more proximally in the

rectum. Hemorrhoidal tissue is pulled into the cylinder by the grasping forceps, and the bands (two) ejected on the base of the hemorrhoidal mass by compressing the handle of the ligator. The tissue is released from the forceps, and the instruments and anoscope removed.

Several other points are important:

1. Use two bands for each location to be treated. Either band may break, but at least one will hold well.
2. It is unwise to band both sides of the distal rectum at one time, as more pressure, discomfort and tenesmus may occur.
3. At the end of the procedure, replaced ligated tissue into the rectum if it is protruding.
4. If severe initial pain occurs, the bands may be removed with a No. 11 scalpel. This is difficult to do and some bleeding will occur. Further banding may be done, but not on the same day as the requirement of a "relaxed" patient will not be present.
5. Do not allow any anal canal epithelium or portion of a papilla to be included in the bands. These are sensitive areas and pain will result. The distal rectal mucosa with underlying internal hemorrhoids is generally insensitive.

6. Following the procedure, advise the patient to use warm sitz baths for discomfort, and to use a bulk stool softener for three weeks.

7. The patient may return to his usual activities the following day. Discomfort beyond 48 hours is the exception.

8. Three weeks is the expected time for complete resolution and healing of the sloughing process, and the patient is advised to return after that time for reevaluation and possible further banding.

Texts of anal canal and rectal anatomy should be consulted if the physician is unfamiliar with details of this area. Barron's article<sup>2</sup> has excellent illustrations of the ligator and grasping forceps.

### Complications and Results

Two hundred patients between 1972 and 1975 were treated by band ligation. Table 1 shows the type and incidence of complications. Immediate pain requiring band removal is uncommon, but may occur even with properly placed ligatures. One hospitalization was needed in this series, that for the patient with hemorrhage. Hemorrhage is rare in this and other

series,<sup>3</sup> and is controlled by a suture ligature of chromic catgut.

Results (Table 2) are satisfactory in the great majority. Many patients require more than one procedure, the average being 1.9 in this series. The objective in all types of hemorrhoidal treatment is cessation of symptoms, not to make the anus appear "normal." Removal of protruding tissue commonly stops the problems of anal discharge, bleeding, and pruritus.

**Table 1. Complications (200 patients)**

Immediate pain — bands removed	3
Severe discomfort	4
Hemorrhage	1
External thrombosis	<u>2</u>
Complication Rate	5%

### Contraindications

Untreated colorectal neoplasm, anal fissure, fistula in ano and recent external thrombosis are contraindications to hemorrhoidal band ligation.

**Table 2. Results (200 patients)**

Relief of protrusion, objective and subjective	155
Relief of protrusion, subjective only	39
Unsatisfactory	<u>6</u>
Excellent/good Results	97%

### Summary

Hemorrhoidal symptoms probably afflict half of the population at some time. Most people do not need specific treatment, only accurate evaluation and conservative management. The patient who notes *protrusion* of internal hemorrhoids is a candidate for band ligation. Banding usually results in cessation of local symptoms without prolonged disability. Details of patient selection and the technique of ligation are presented in this report.

### References

1. Blaisdell PC: Prevention of massive hemorrhage secondary to hemorrhoidectomy. *Surg Gynecol Obstet* 106:485-488, 1958
2. Barron J: Office ligation of internal hemorrhoids. *Am J Surg* 105:563-570, 1963
3. Corman ML, Veidenheimer MC: The new hemorrhoidectomy. *Surg Clin North Am* 53:417-422, 1973

