An Instrument To Aid In Removal Of Colon And Rectal Polyps

James Barron
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JAMES BARRON, M.D.®

INTRODUCTION

Routine proctosigmoidoscopic and barium enema examinations demonstrates a significant number of polyps in the colon and rectum in which removal is clearly indicated. There is general agreement that bleeding polyps, those that are increasing in size or are over 1 cm. in diameter should be removed because of their potential hazard of malignancy. Removal of polyps in certain areas of the colon or rectum often present problems in which the risk of operation can equal the danger of malignancy. As with all technical procedures complications occasionally follow removal of polyps by conventional methods. In fact the hazard of removal in certain instances may equal the risk of malignancy. These complications include abscesses, postoperative wound disruption when long incisions are used, active bleeding from the pedicle of the polyp following biopsy forcep excision and damage to the intestinal wall after the use of both forceps and electrocoagulation. The latter complication may lead to later perforation inasmuch as the extent of injury may not be appreciated at the time of the operation.

STEPS TO REDUCE COMPLICATIONS

1. Incision: Two short muscle-splitting incisions, one in the left lower quadrant and the other in the right upper quadrant directly over the mobile section of the colon to permit adequate visualization of the entire colon, without recourse to extensive mobilization which may be difficult and even hazardous in poor risk and obese patients, and in those who have had previous intra-abdominal infections or have undergone previous laparotomies.

2. Control of hemorrhage: Bleeding is completely controlled by the application of an elastic ligature to the base of the pedicle of the polyp.

3. Reduction in the possibility of damage to the bowel wall. Neither the wire snare or the electrocoagular need be used.

*Division III, Department of General Surgery.
Figure 1
Close up view of ligating instrument and suction tip. The suction tip is flared in order to give more control on the polyp. Two 0 bands are used. They are loaded on the ligating rings by the use of the cone shaped tip as shown.

Figure 2
Ligating instruments. The shaft is 14" in length.
4. **Special Instrument:** An instrument has been developed which is of value in attaining these objectives.

The instrument used is a further development of the device previously described by us (Figure 1) for the removal of internal hemorrhoids. The shaft has been lengthened to 14" (Figure 2) in order to be able to use it with the sigmoidoscope and a flared metal suction tip is employed in place of grasping forceps. (Figure 3).

**TECHNIC OF USE**

The proctoscope with distal ligating is inserted through the anal canal or an opening in the bowel wall and the polyp is located. The long shafted instrument with terminal drums loaded with rubber bands is introduced through the proctoscope until the drums protrude through its distal end. A rigid flared tip suction tube is passed through the drums, picks up the polyp and clearly demonstrates the pedicle. The suction tip is withdrawn until the pedicle is flush with the end of the inner drum. Pressure on the trigger mechanism of the instrument deposits the ligating band at the base of the pedicle of the polyp where it completely constricts the blood supply of the tumor.

Figure 3

The suction tip is passed through the ligating rings and the polyp and stalk pulled through to the desired position. The handle on the ligating instrument is squeezed and the bands are deposited as shown. This completely controls the vascular supply to the polyp and stalk.
The bulk of the polyp may now be removed by sharp biopsy forceps for pathological examination without danger of bleeding. The tissue distal to the rubber bands becomes completely necrotic in 24 hours and sloughs away in from 7 to 10 days. This method of removal should be employed only when the operator is reasonably certain that he is not dealing with malignancy. While this technic has its most important application in the removal of polyps from relatively inaccessible areas of the colon, it is equally effective for rectal and colon polyps within easy reach of the proctoscope. The instrument has been most helpful in controlling the active bleeding from polyp pedicles after removal with biopsy forceps and snares.

We have experienced complete satisfaction with the instrument in the removal of more than 150 polyps of the rectum and colon. Slight bleeding subsequent to the ligation occurred in only four patients. In one it was due to slipping of a round rubber band. Application of a flat rubber band, the use of which is now routine, controlled the bleeding. The other three patients had slight bleeding between the 7th to 11th days which did not require treatment.

**Summary and Conclusions**

1. A method of removal of colon and rectal polyps by a specially designed instrument is presented.

2. Complication such as hemorrhage, perforation, etc., are reduced to a minimum.

3. A satisfactory result has been obtained in the removal of more than 150 polyps of colon and rectum.