



Endoscopic Hemorrhoidal Ligation

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ABSTRACT

Introduction: this study aimed to assess the results of Endoscopic hemorrhoidal ligation (EHL) for internal hemorrhoids.

Methods and Results: A total of 23 patients with internal hemorrhoids were treated by EHL and the results were noted. EHL was found to be a safe and effective to treat internal hemorrhoids which are not contraindicated for the procedure. The result of EHL was satisfactory in both Grade 2 and 3 hemorrhoids, however grade 2 hemorrhoids required lesser number of repeat procedures. Also, EHL can be safely done as a office procedure and is not accompanied by any significant post procedure pain or complications.

Conclusion: EHL is a safe office procedure and can be offered as the first choice for symptomatic grade 2 and 3 hemorrhoids.

KEYWORDS

Internal hemorrhoids, rubber band ligation, Endoscopic hemorrhoid ligation

Introduction:

Hemorrhoids have affected the mankind since the early days of human life. They are one of the most prevalent anoctal disorders among adults, with more than 90% of patients undergoing lower GI endoscopy are found to have varying degree of hemorrhoids.(1) They are classified as internal or external depending upon their location with respect to the dentate line. Internal hemorrhoids are further classified by Goligher's grading (2). Grade 1 hemorrhoids are hemorrhoids that protrude into the anal canal but do not prolapse, Grade 2 are hemorrhoids with bleeding with protrusion and spontaneous reduction, Grade 3 are hemorrhoids that require manual reduction and Grade 4 are prolapsed hemorrhoids that cannot be manually reduced. A wide variety of procedures have been described for treatment of hemorrhoids ranging from conservative means to office procedures and surgical procedures. Office procedures for hemorrhoids include: Injection sclerotherapy, infrared and laser photocoagulation, cryosurgery, bipolar coagulation and rubber band ligation (RBL). (1)

Rubber band ligation is the preferred treatment out of these office procedures and is often the recommended procedure for Grade 1- 3 hemorrhoids and is acceptable and well established procedure. Grade 4 hemorrhoids are typically offered surgical procedure. RBL can be done through either rigid anoscope devices or thorough a flexible endoscopic system. Rigid systems have the shortcomings of limited maneuverability, limited vision and lack of documentation. These deficiencies can be overcome with the help of flexible endoscopic systems. Endoscope mounted rubber band ligation devices have been used to treat esophageal varices since late 1980s, started by Steigman and Goff (3,4,5) and known to be effective and the same ligation devices were later used for treatment of hemorrhoids. Two types of devices can be used: smaller length device for use with a gastroscope and a larger one with a colonoscope.

Methods:

Patients with symptomatic internal hemorrhoids who failed to respond with 6 weeks of conservative treatment trial were treated and included in this study. All patients underwent full colonoscopy before initiation of intervention to rule out other causes of bleeding. Hemorrhoid severity was classified by Goligher's grading.

Exclusion criteria included external hemorrhoids, hemorrhoids associated with rectal prolapse and large grade III and grade IV hemorrhoids.

Informed consent was taken from all the patients and all the patients were given a choice to opt between banding and surgical procedure. Multiple band ligator was used for banding of hemorrhoids. Internal hemorrhoids were ligated proximal to dentate line.

Both forward viewing position and retroflexed position of endoscope were used for band application as was found feasible during the initial colonoscopic evaluation. Retroflexed position was favoured and was the default technique. Forward viewing position of endoscope for band application was used only when hemorrhoids were better approached in that position. Band application was targeted to incorporate the apex and upper body of hemorrhoids. From 1 to 5 bands were placed in a single session. After completion of band application, the ligator device attached to the endoscope was removed and the only the endoscope was inserted and band application was inspected in both forward viewing and retroflexed views. Band placement was deemed satisfactory, if the bands were placed proximal to the dentate line and patient did not have severe perineal pain during or after the procedure.

After band application, patients were routinely given oral antibiotics for 5 days and a laxative for 3 weeks. Patients were then followed up at 3 weeks from the initial band placement and a check scopy was performed. If the first session of banding had not achieved desired response, they were offered another session of banding. Patients were then followed up again at 3 weeks interval, and once the patients had achieved satisfactory response, they were asked to return for a follow up at 3 months and symptomatic and endoscopic response was noted.

Results:

A total of 23 patients (13 men (57%), 10 (43%) women; mean age 42 (SD 14) years, range 26-57 years) with bleeding internal hemorrhoids underwent EHL. Hemorrhoids were grade 2 in 17 patients (74%) and grade 3 in 6 patients (26%).

A total of 71 bands (range 1-5) were placed in different patients at the first session. 20 patients (87%) had their procedure done with the endoscope in retroflexion and 3 patients (13%) had their band placement in forward viewing position of endoscope.

During band placement, the intention was to place the band 1 – 1.5cm proximal to the dentate line, however the final

placement of the band varied from few millimeters to 1 cm above the dentate line. This variation resulted from the suction on the hemorrhoidal tissue.

Only one patient had malpositioned band, due to excessive pain in post procedure period, however it did not necessitate removal. He was managed conservatively with analgesics.

One session of EHL was required in 14 (61%) of patients; 9 patients (39%) underwent a second session. Of these, 5 patients belonged to the Grade 3 hemorrhoids and 4 patients of grade 2 hemorrhoids. One of the patients required a total of 3 sessions of EHL, which belonged to the grade 3 hemorrhoids. In retreated patients 1 - 3 bands were used.

In patients with stage II hemorrhoids, 24 % underwent re-treatment compared with 83% of patients with stage III hemorrhoids.

Discussion:

As stated by ACRCs (6), the non surgical hemorrhoid treatments aim at 3 goals:

1. To decrease the blood flow to hemorrhoid,
2. Reduce the size of hemorrhoidal tissue, and
3. To promote the fixation of hemorrhoidal base to rectal wall to decrease hemorrhoidal prolapsed.

Various techniques have been described with aim to fulfill these 3 goals viz. rubber band ligation, sclerotherapy, bipolar coagulation, cryotherapy, and radiowave ablation. (7,8,9). Of these, EHL

Meta-analyses of the various techniques have shown that although all techniques are comparable in the short term, late recurrence of bleeding and prolapse are less frequent after elastic band ligation. (10,11)

The proposed mechanisms of action of RBL are reduction of tissue redundancy, submucosal fibrosis, and reduction of blood supply, all of which reduce bleeding and prolapse.

Blaisdale introduced a ligating device with pre-tied silk suture in 1958.(12) Barron described the ligation of hemorrhoids by using rubber bands in 1963.(13) This conventional technique for band application used rigid instruments that allow limited maneuverability which can limit visualization. Many studies have been performed with the subject in mind and both forward viewing and retroflexed view techniques utilized and both are found to be satisfactory.(14,15)

As highlighted by Trowers et al (16) in 1998, EHL offers several advantages in comparison to conventional banding with the help of rigid devices. Two of the most important advantages offered by EHL are ease of manoeuvrability and magnification of detail by video monitor. The dentate line is better seen on flexible endoscopes. The importance of dentate line is due to absence of cutaneous pain fibres above the dentate line. Other advantages offered are availability of recording and reproduction of video for documentation and follow up. It also allows the advantage for assisting staff and patient to visualise the procedure, if desired.

Health care physicians should be well aware of the contra-indications for EHL. These include: acute thrombosis, active proctitis, significant rectal prolapsed, anorectal sepsis, associated rectal malignancy, coagulopathy and immunosuppressed patients. (17)

Complications seem to be few after the procedure, however they should always be kept in mind. Pain, either due to spasm or due to malpositioned band is the most common complication and is seen around 8% of the patients. (18) Other complications include: thrombosis of haemorrhoids distal to the band application, delayed hemorrhage, localised infection or abscess, sepsis and urinary retention. (19) Bleeding associated with this procedure can be seen in two settings. First type of

bleeding is seen with 2-4 days due to band dislodgement and the second type is around 5-7 days after the procedure due to mucosal ulceration.

The patients in present study had from 1- 5 bands application without any significant adverse effect. Both grade 2 and grade 3 internal haemorrhoids patients achieved significant symptomatic relief, although patients in grade 2 hemorrhoids group required lesser number of repeat sessions.

Conclusion:

EHL is a safe and effective procedure in treatment of internal haemorrhoids. It provides a good long term relief and can be done as office procedure without bowel preparation, sedation or anaesthesia. EHL provides certain advantages over the rigid systems and should be practised more widely.

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