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Research Article

Rubber Band Ligation for Management of Haemorrhoids: A Large Series from Bangladesh

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Abstract

Introduction: Haemorrhoids represent arterio-venous communication in the anal canal and is a common cause of fresh bleeding per rectum globally with worldwide prevalence.

Methods: There are varied modalities of treatment of haemorrhoids including medical, non-surgical interventions and surgical ones. Rubber band ligation is a non-surgical endoscopic modality for haemorrhoids management.

Results: Among our 664 patients who underwent rubber band ligation for haemorrhoids, 48% patients remained symptom-free and 75% improved over a 6 month to 1 year follow up period. Complications were few with post-procedural pain in 20% being the most common one. All complications were conservatively managed.

Conclusions: We conclude that rubber band ligation is a safe, effective, patient friendly, cost-effective non-invasive treatment approach for haemorrhoid management.

Keywords: Haemorrhoids; Rubber Band Ligation

Introduction

Haemorrhoids are arterio-venous communications between terminal branches of superior rectal artery and superior, middle and inferior rectal veins, surrounded by connective tissue in the subepithelial space of anal canal [1]. Symptoms include bleeding, protrusion, itching and pain [4,5]. Pathogenesis is still unknown. It has been proposed that inadequate fibre intake, prolonged sitting in toilet and chronic straining at defecation, constipation, diarrhoea, pregnancy and family history are all contributing factors [2,3].

The prevalence is very high and has been reported to be as high as 85% at proctoscopy [4], although many of these patients remain asymptomatic. In the USA, 4.4% of the population have haemorrhoids, the prevalence being highest among those between 45 to 65 years of age [5]. In the Western world, prevalence of haemorrhoids is on the decline from the second half of the 20th century [6]. Data from Bangladesh is unavailable [7]. From our personal experience, we have observed that approximately 80% of our patients who undergo colonoscopic examination have haemorrhoids, majority of whom are without symptoms.

The management of haemorrhoids is varied and includes increased dietary fiber intake to medications like topical ointments to oral drugs. Surgical haemorrhoidectomy is widely accepted for 3rd and 4th degree haemorrhoids. However, many non-operative interventions for haemorrhoid management are also popular and widely accepted, especially for 2nd degree haemorrhoids. These include submucosal sclerotherapy, cryotherapy, bipolar diathermy, direct current electrotherapy, infrared photocoagulation and rubber band ligation. Here we present our experience of a large cohort of patients who underwent rubber band ligation under our care.

Methods

We have retrospectively analyzed the data of 664 patients, who underwent rubber band ligation under our care. All patients underwent rubber band ligation for haemorrhoids by a single, senior Endoscopist with experience of performing more than 55000 diagnostic and therapeutic colonoscopies. These patients presented to us from 2008 to date. They were between 20 to 85 years of age with male to female ration being 65:35. All of them has 1st to 3rd degree haemorrhoids, majority (82%) having 2nd degree.

We used endoscopic variceal ligators for rubber band ligation, which have been shown to be very effective in earlier studies [8]. We restricted to applying rubber bands to 2 columns of haemorrhoids (Figure 1). It was performed on out-patient basis. Each patient underwent single session of rubber band ligation under total intravascular anesthesia (TIVA) with injection propofol (1mg/kg body weight) intravenously administered by an Anesthetist. Patients were monitored for minimum 1 hour or till complete recovery from TIVA and allowed to go home subsequently. They were advised to take liquid or semi-solid diet for the next 48 hours and sitz (hip) bath and laxatives and analgesics, if necessary.

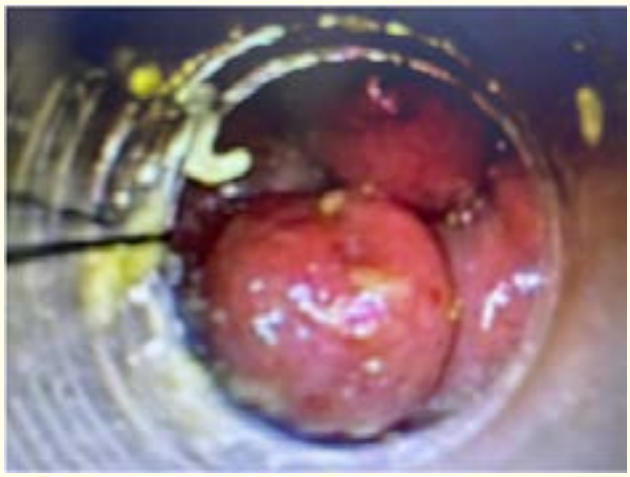

Figure 1: Rubber bands applied to haemorrhoid columns.

Results

Our study included 664 patients who underwent rubber band ligation under our care from 2008 to date. Of them 432 patients were males and rest females. They were between 20 years to 85 years of age, majority (>74%) above 45 years. The main complication associated with the procedure was pain, experienced by 20% patients, while minor bleeding was seen in 10 patients, urinary retention in 5 and abscess formation in 1 patient. In general the procedure was safe, effective and to patient satisfaction. We followed our patients at between 6 months to 1 year. During follow up, we found 48% of our patients to be symptom free, while 75% had improved (Table 1).

N	664
Male: Female	65:35
Age	20 to 85 years
No. of session per patient	1
No. of rubber bands applied per patient	2
At 6 month to 1 year follow up	
Improvement	75%
Symptom free	48%
Complications	
Post-procedure pain	20%
Minor bleeding	10
Urinary retention	5
Abscess formation	1

Table 1: Patients and outcome.

Discussion

The fundamental principle of rubber band ligation of haemorrhoids is tight encircling of the haemorrhoid complex, which leads to scar formation and resolution of prolapse. The rubber bands are usually applied approximately 2 cm from the dentate line, as otherwise severe pain may result from stimulation of somatic sensory nerve afferents, which are absent above anal transition zone [9].

In Bangladesh, haemorrhoids is often considered as a taboo with patients, especially females, usually remaining reluctant to seek medical consultation. The condition as a result remains under diagnosed. At the same time, understandably many patients ultimately present with advanced disease. Besides, as many patients remain asymptomatic, they often remain reluctant to undergo treatment, even when diagnosed early with the condition. Lack of Colorectal Surgeons and facilities and the resultant high cost of treatment in the country also serve as barrier for surgical management. As such, our aim remained to introduce and popularize a modality for haemorrhoids, which will be relatively cheap, not require surgical intervention or hospitalization and can be done in peripheral setups. We considered rubber band ligation to be the ideal option, especially given the fact that with the expansion of Gastroenterology as a super-specialty in the country, Endoscopists and endoscopy setups are now available in our smaller towns also.

Our experience was a pleasant one. Not only are our patients welcoming to rubber band ligation as treatment option for haemorrhoids, our outcome is also comparable with the rest of the world. Studies have reported improvement in 80% to 89% cases at 5-year follow up, while symptom free 5-year follow up has been reported in 44% to 68% cases [10,11]. Due to our practice set up and reluctance of patients to remain on long term follow up, we were unable to follow them up for such long duration. Most of our patients were followed up at 6 months to 1 year and our data are similar to these studies. High recurrence has been reported as high as 68% at 5-year follow up in some studies [12,13], which unfortunately we could not assess in our series, as we could not follow our patients till that long. This remains a weaker aspect of our work.

The main complication associated with rubber band ligation remains pain, reported in 5% to 60% cases [14,15]. Our patients reported of post-procedure pain in only 20% cases, possibly due to our conservative approach to ensure patients comfort, that include performing procedure under TIVA and post-procedure dietary measures and sitz bath plus the use of analgesic and laxative on demand. Other infrequent complications like abscess formation, urinary retention, prolapse, bleeding, thrombosis of adjacent haemorrhoid, which are seen in <5% cases [16], were almost absent in our series. All complications were conservatively managed.

Conclusion

Haemorrhoids is a common gastrointestinal tract pathology that is encountered worldwide alike. The management of haemorrhoids is also wide ranged, with medical management being the option of choice for 1st degree haemorrhois, while surgical haemorrhoidectomy kept reserved for 3rd and 4th degree ones. Rubber band ligation is simple, safe, cost effective, easy and patient friendly endoscopic intervention for 2nd degree haemorrhoids. Our experience in Bangladesh spanning over one and half decades,

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