ORIGINAL RESEARCH

Rubber band ligation as a simple safe and cost-effective procedure for haemorrhoids

Dr.Thasin J Rasool

Associate Professor, Department of General Surgery, Mount Zion Medical College and Hospital, Adoor, Kerala, India

Corresponding Author
Dr. Thasin J Rasool
Associate Professor, Department of General Surgery, Mount Zion Medical College and Hospital, Adoor, Kerala, India

Received: 12 March, 2023 Accepted: 18 April, 2023

ABSTRACT
The rubber band ligation procedure is the least invasive of these modalities, with a lower risk of complications and no requirement for hospitalization. As a result, the current study was designed to assess the efficiency of rubber band ligation in grade II and III internal haemorrhoids, as well as the size and pattern of post-procedural problems. This prospective observational research was carried out on a sample of 100 patients who visited our outpatient department and were identified as having either grade II or grade III haemorrhoids. Barron Ligator (Precise, Canada) banded all recruited research patients with haemorrhoids in a single session using a rubber band and the local anaesthetic drug xylocaine jelly. To measure symptomatic improvement, all patients were followed on the 10th day, 1st month, and 6th month following the surgery. The goal of this study is to determine the efficacy of rubber band ligation in several clinical parameters such as post-ligation pain or discomfort, the need for painkiller, any complications, and time lost from employment. After rubber band ligation, 89% of them had symptom relief, while the remaining 11% experienced lingering issues. As suggested by our study, we conclude that rubber band ligation for grade II and III haemorrhoids is a straightforward, safer, and easy-to-perform outpatient treatment with less analgesic requirements and no need for anaesthesia.
Key words: Day case surgery, bleeding per rectum, mass per rectum, interno-external hemorrhoids, rubber band ligation procedure

INTRODUCTION

Haemorrhoids are the most prevalent benign condition among anorectal disorders. Haemorrhoids can be treated using a variety of methods, including medicinal, surgical, and instrumental methods. Rubber band ligation, sclerotherapyand infrared and laser therapy are examples of instrumental treatments.
Due to the lack of hospitalization and use of local anaesthetics such 2% xylocaine jelly with lower risk of complications, rubber band ligation is a daycare technique. Grade III haemorrhoids are often treated with instruments, perhaps in combination with carefully monitored medical care. For grade IV haemorrhoids, surgery is the better option. Interno-external haemorrhoids are often treated surgically (open, closed, or minimally invasive) on a global scale.
Rubber band ligation is the most efficient non-invasive treatment for grade II haemorrhoids. There are various disagreements among surgeons on the use of purely instrumental approaches vs. carefully followed medicinal therapy for rubber band ligation procedures in grade III haemorrhoids. Numerous scientific studies have been published that demonstrate the effectiveness of rubber band ligation in third-degree haemorrhoids[1,2]. Currently, it is minimally painful, non-invasive, frequently performed in daycare settings, and allows for a quicker recovery without the need for hospitalization. With this background, we hypothesize that conducting this study will allow us to assess the effectiveness of rubber band ligation for second- to third-degree haemorrhoids as well as the scope and pattern of postoperative complications.

METHODOLOGY

In this study, 100 outdoor patients who complained of bleeding per rectum and whose mass had either naturally decreased (second degree) or required physical reduction of mass (third degree) over the course of a year were examined in the general surgery department at Mount Zion Medical College, Adoor. The study examined the results of rubber band ligation in cases of internal haemorrhoids in the

second and third degree using observational cross-sectional prospective methods. The Institutional Ethical Committee cleared the study.

Modified Golligher Grading was used to categorize haemorrhoids. In this study, individuals with either grade II or grade III internal haemorrhoids who refused medical treatment along with the necessary measures for personal cleanliness and daily activities in either gender and with 14 years of age or older were included. Excluded patients were those with first-degree, fourth-degree, external haemorrhoids, as well as those who missed their follow-up appointment.

Every patient had a thorough history and examination after giving informed, signed permission. Patients who met the requirements for inclusion underwent aseptic rubber band ligation in a daycare setting. Before the surgery, all patients received bowel preparation to prevent intestinal peristalsis for the first 24 hours in order to prevent ligature slippage. The rubber band ligation surgery was carried out in the left lateral sims position without the use of anaesthetic. The proctoscope was introduced and entered up to 1-2 cm above the dentate line after the topical administration of xylocaine jelly. Haemorrhoidal cushions were allowed to form in the proctoscope lumen following a gradual withdrawal, and they were then drawn into the Barron Ligator (Precise, Canada) under negative pressure.

The tissues were drawn into the tip of the cylindrical portion of the ligator until it was elongated and tightened. After that trigger was released, implementing a Barron rubber o-ring band with an inner diameter of about 1mm around the base of the haemorrhoid. All primary haemorrhoids were ligated in one setting. At the end of the procedure, all patients were kept under observation for 1-2 h to detect any early complications such as bleeding, pain, urinary retention, and vasovagal attack. We advised sitz bath at room temperature, a high fibre rich diet, stool softener, proper anal hygiene, to avoid constipation, and proper counselling regarding early and late complications. Outcome parameters such as post-ligation pain or discomfort, the requirement of an analgesic drug, any complications, and time off work were observed. Patients were followed on the 10th day, 1 month, and on 6 months after post-procedure.

Indicators of success included post-ligation pain or discomfort, the need for an analgesic, any complications and time away from work. Following the procedure, patients were checked on at 10 days, 1 month and 6 months.

RESULTS

According to the Visual Analogue Scale (VAS) used to measure post-procedure discomfort, 78% of patients reported no difficulty, 13% reported mild discomfort, 9% reported moderate discomfort (lasting less than three days) and none reported severe discomfort. (Figure 1)

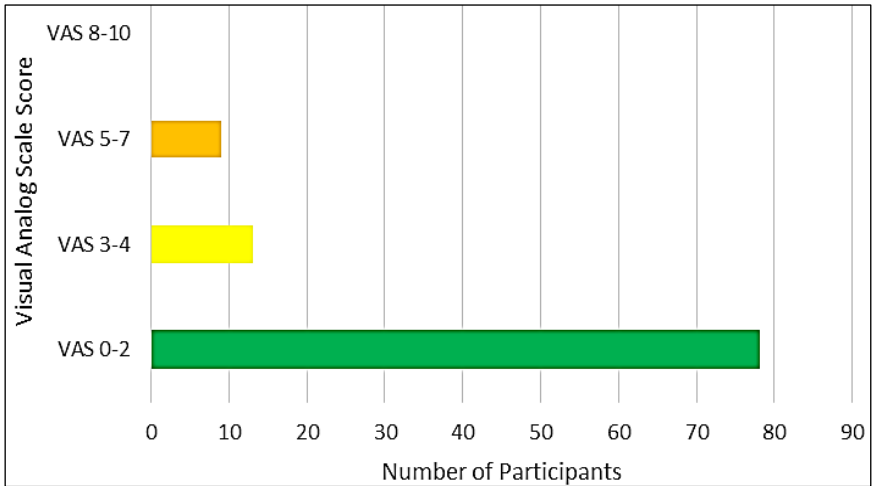

Fig 1: Distribution of cases as per the assessment of post-procedure discomfort by VAS

According to the amount of analgesic medication needed, 78% of patients needed none, 16% needed it for 1-3 days and 6% needed it for longer than 3 days. (Figure 2)

After the treatment, the majority of the participants (79%) went back to their regular workday, while 7% of participants started working four days later. The remaining 14% joined the workforce within one to three days. (Figure 3)

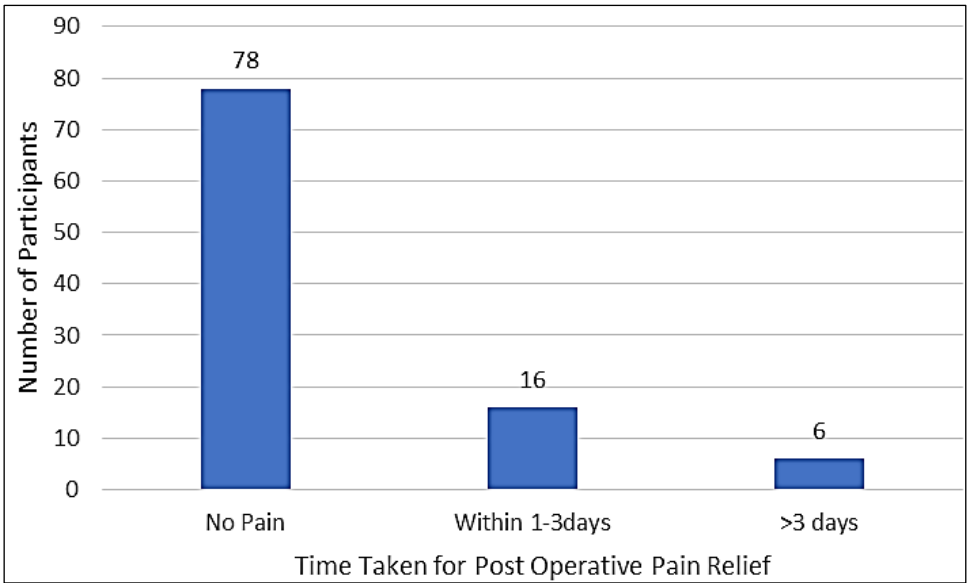

Fig 2: Distribution of patients according to the duration of analgesic requirement

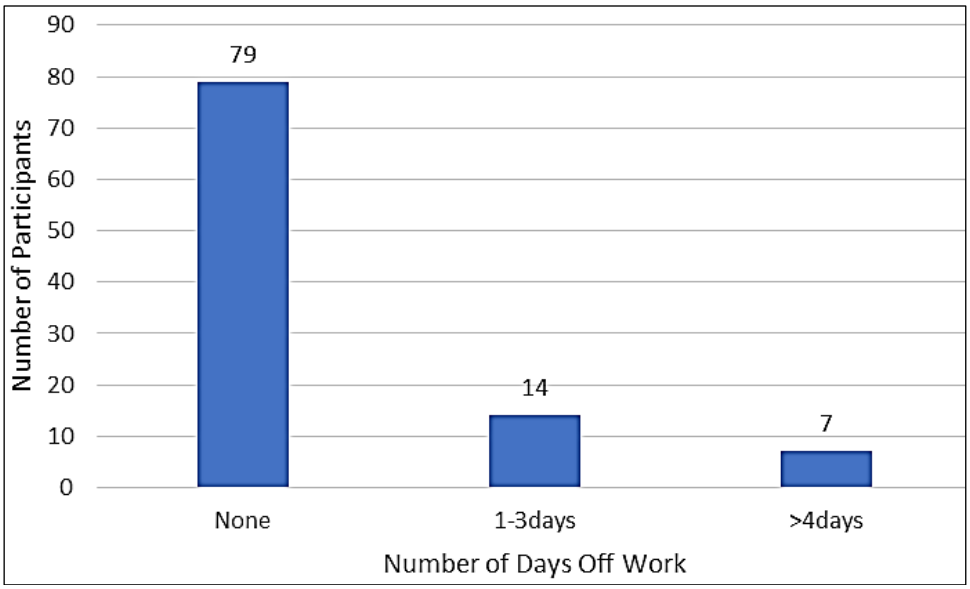

Fig 3: Distribution of patients according to number of off-days from duty

After the rubber band ligation, complications might range from mild to serious, necessitating hospitalization. After rubber band ligation, 22% of patients report anal discomfort, and 18% of patients have rectal haemorrhage. There were three individuals with urinary retention who needed catheterization, but no additional infections or vasovagal attacks were seen as complications. (Figure 4)

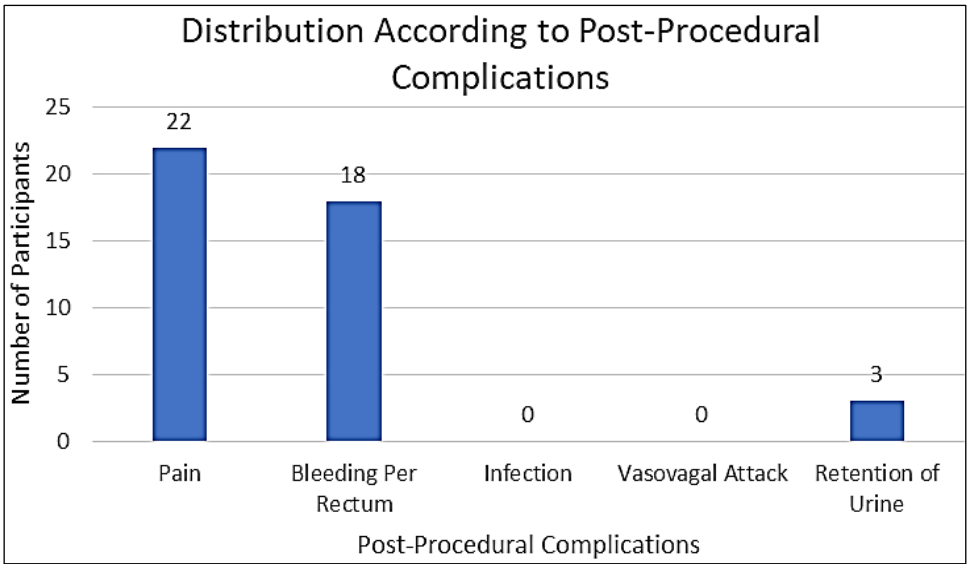

Fig 4: Distribution of patients with post-procedural complications

Following a follow-up on the tenth day, one month, and six months after the rubber band ligation procedure, clinical symptoms such rectal bleeding, discomfort and piles mass prolapse gradually subsided. After the tenth post-procedural day, irritation and discharge abated. Figure 5 provides a summary of the parameters that were observed at the follow-up visit.

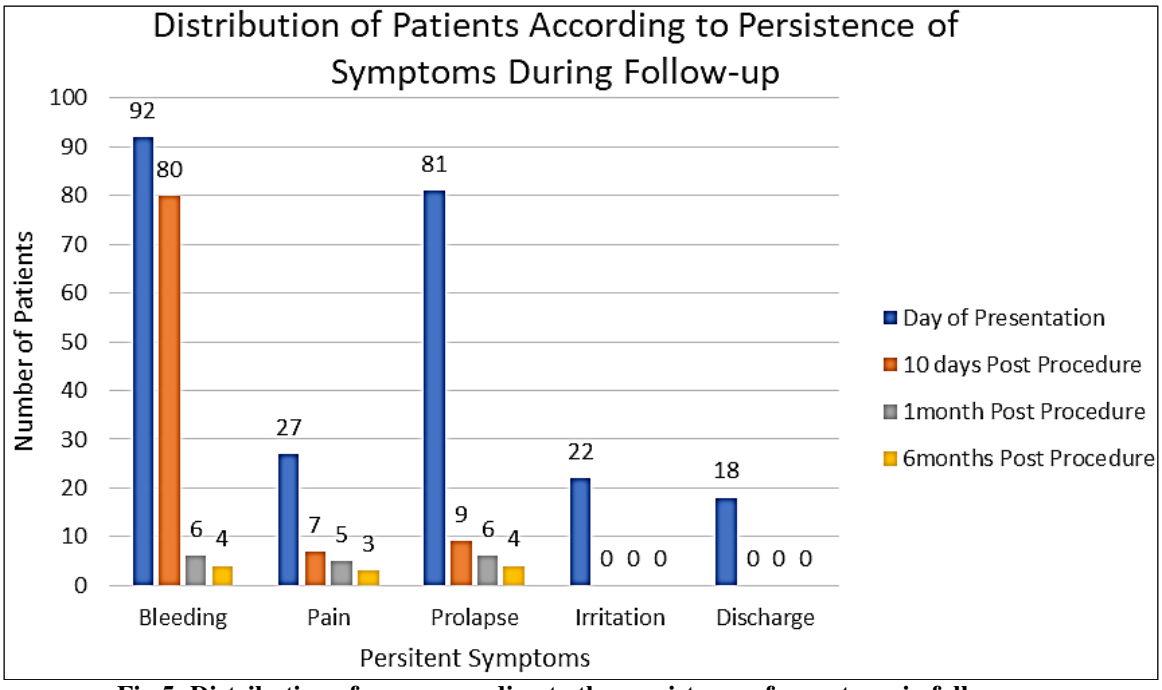

Fig 5: Distribution of cases according to the persistence of symptoms in follow-up

DISCUSSION

In studies by Komborozos*et al*. and Bat *et al*., problems of bleeding via rectum were recorded in 2.2% of patients [3,4]. Bleeding is the most unavoidable consequence following rubber band ligation. It results from localized irritation and the haemorrhoidal nodule falling out. According to this study, rubber band ligation operation complication rates were 6.0% after one month and 4% after six months.

Based on the remission of presenting symptoms, lack of repeat treatment, patient satisfaction, and time before returning to work, Forlini*et al*. 2009 endorsed the safety of rubber band ligation [2]. According to Johansson et al., only 10% of patients who had rubber band ligation needed excisional hemorrhoidectomy, but 6.6–14% of them needed subsequent treatment because their symptoms returned [5]. In this trial, 11% of participants had symptoms that required conventional surgery after six months.

According to a review by Lee *et al*. of 39 studies involving 8060 rubber band ligation patients, postbanding complications included severe pain

(5.8%), rectal bleeding (1.7%), and infection (0.05%). However, 415 patients experienced mild pain 24 to 48 hours after the procedure, which could be treated with warm sitz baths and oral analgesics [6]. The same outcomes were reported by Gehamy and Weakley. In this trial, 78% of patients needed no analgesic medication and were alleviated by a warm sitz bath, whereas 16% needed analgesics for 1-3 days and just 6% needed them for longer than three days [7].

According to Saviozet *al*., 9.2% of cases of symptomatic recurrence following rubber band ligation required further rubber band ligation or surgery [8]. In this study, we discovered that 4% of patients still experience rectal bleeding six months following the treatment. According to research by Bat *et al*., the risk of problems following rubber band ligation was rather low (4.2%), and the majority of them were mild and self-limiting [9]. In our study, 3% of individuals experienced urinary retention along with a slight bleeding and pain issue.

In a retrospective investigation of the short- and long-term effectiveness of rubber band ligation for haemorrhoids, Gaglooet *al*. found that 92% of second-degree and 76% of third-degree patients had no problems after two months. In this study, problems such as bleeding, discomfort and prolapse are present in 17% of patients at the end of the first month and in 11% of patients after six months [10].

In their study, Walker *et al*. found that 20.2% of patients missed work and 25% of patients had postprocedural problems. 79% of participants in this research went back to work the next day after the surgery [11].

Our study had a couple of drawbacks. There is just one centre from which this study is being done. Given the rising prevalence of haemorrhoids, multicentric research is required to determine if rubber band ligation is effective in treating grade II and grade III haemorrhoids. Modifying one's diet and way of life are crucial parts in managing haemorrhoids. All patients who were included were given the necessary nutrition and lifestyle recommendations, however our study did not control for or monitor long-term post-operative lifestyle changes [12].

CONCLUSION

The most prevalent benign anorectal disease in adults, and mostly in men, are haemorrhoids. The daycare method of rubber band ligation is convenient for patients and doesn't require anaesthetic. Patients experienced less problems, used fewer analgesics, and were able to return to their jobs more rapidly after treatment for second-and third-degree haemorrhoids. The emergency technique is also used to stop active haemorrhoids bleeding. The rubber band ligation technique, which is most frequently used for patients who are unable to undergo surgery or who have a co-morbid condition that contraindicates anaesthesia but is not used in thrombosedhaemorrhoids, is more effective in second-degree than third-degree haemorrhoids.

REFERENCES

1. Barron J: Office ligation of internal hemorrhoids. Am J Surg. 1963, 105:563-70. 10.1016/0002-9610(63)90332-5
2. Forlini A, Manzelli A, Quaresima S, Forlini M: Long-term result after rubber band ligation for haemorrhoids.Int J Colorectal Dis. 2009, 24:1007-10. 10.1007/s00384-009-0698-y
3. Komborozos VA, Skrekas GJ, Pissiotis CA: Rubber band ligation of symptomatic internal hemorrhoids:results of 500 cases. Dig Surg. 2000, 17:71-6. 10.1159/000018803
4. Bat L, Melzer E, Koler M, Dreznick Z, Shemesh E: Complications of rubber band ligation of symptomaticinternal hemorrhoids. Dis Colon Rectum. 1993, 36:287-90. 10.1007/BF02053512
5. Johanson JF, Rimm A: Optimal nonsurgical treatment of hemorrhoids: a comparative analysis of infraredcoagulation, rubber band ligation, and injection sclerotherapy. Am J Gastroenterol. 1992, 87:1600-6.
6. Lee HH, Spencer RJ, Beart RW Jr: Multiple hemorrhoidal bandings in a single session. Dis Colon Rectum.1994, 37:37-41. 10.1007/BF02047212
7. Gehamy RA, Weakley FL: Internal hemorrhoidectomy by elastic ligation. Dis Colon Rectum. 1974, 17:347-53.
8. Savioz D, Roche B, Glauser T, Dobrinov A, Ludwig C, Marti MC: Rubber band ligation of hemorrhoids:relapse as a function of time. Int J Colorectal Dis. 1998, 13:154-6. 10.1007/s003840050156
9. Bat L, Melzer E, Koler M, Dreznick Z, Shemesh E: Complications of rubber band ligation of symptomaticinternal hemorrhoids. Dis Colon Rectum. 1993, 36:287-90. 10.1007/BF02053512
10. Gagloo MA, Hijaz SW, Nasir SA, et al.: Comparative study of hemorrhoidectomy and rubber band ligation intreatment of second and third degree hemorrhoids in kashmir. Indian J Surg. 2013, 75:356-60.10.1007/s12262-012-0498-4
11. Walker AJ, Leicester RJ, Nicholls RJ, Mann CV: A prospective study of infrared coagulation, injection andrubber band ligation in the treatment of haemorrhoids. Int J Colorectal Dis. 1990, 5:113-6.10.1007/BF00298482
12. Hollingshead JR, Phillips RK: Haemorrhoids: modern diagnosis and treatment. Postgrad Med J. 2016, 92:4-8.10.1136/postgradmedj-2015-133328