

Original Research Article

Rubber band ligation of hemorrhoids: a hospital based study

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ABSTRACT

Background: Hemorrhoids are symptomatic anal cushions containing arteriovenous anastomosis. Patient with haemorrhoids can present as bleeding per rectum, something (mass) coming out per rectum, perianal itching, Anaemia due to occult blood loss. Various modalities of treatment have been developed to treat symptomatic haemorrhoids. This study was undertaken to determine the efficacy of rubber band ligation in the management of haemorrhoids.

Methods: This study was a prospective study conducted in the Department of Surgery, Government Medical College, Srinagar from June 2015 to June 2018. Patients at any age with first, second- or third-degree internal haemorrhoids were included in the study. Patients with fourth degree, complicated haemorrhoids, previous anorectal surgery or anorectal pathology, and chronic liver disease were excluded. A total of 212 patients were included in the study. Rubber band ligation was done as an OPD procedure. The patients were followed at 2 weeks, 4 weeks, 3-month, 6 month and 1 year after the procedure.

Results: In this study, out of 212 patients, 154(72.6%) were males and 58(27.4%) females. The mean age of this study was 38.7 yr. (Range 17-73 yr.). Patients presented with the complaints of bleeding (184, 86.8%), prolapse (114, 53.7%), constipation (116, 54.7%), pruritis ani (36, 17.0%), pain (12, 5.6%). Band ligation was successful in 188(88.8%) patients, 169(79.7%) patients were cured and in 19(8.9%) improvement was obtained. Various complications occurred after band ligation including vasovagal syncope (2, 0.9%), bleeding per anum (6, 2.8%), pain (12, 5.6%), fissure in ano (1, 0.5%). Recurrence after one year was seen in 9(4.2%) patients.

Conclusions: Author concluded in this study that RBL is an effective outpatient treatment for grade II and III internal haemorrhoids without much complications.

Keywords: Bleeding per anum, Dentate line, Haemorrhoids, Outpatient department, Pruritis ani, Rubber band ligation

INTRODUCTION

Hemorrhoids are symptomatic anal cushions containing arteriovenous anastomosis located at 3,7,11 o'clock positions.¹ The vascular supply is from branches of superior rectal artery and drained by veins emptying into superior rectal veins. Hemorrhoids are classified into internal and external hemorrhoids based on location above or below the dentate line. External hemorrhoids are located below dentate line and are covered with anoderm, innervated by somatic nerves and thus producing pain. Internal hemorrhoids are located above dentate line and

depending on the severity of prolapse; they are divided into four degrees. First degree internal hemorrhoids do not prolapse outside anal canal. Second degree hemorrhoids prolapse outside anal canal but reduce spontaneously. Third degree hemorrhoids prolapse outside anal canal and needs manual reduction. Fourth degree hemorrhoids are irreducible.²

Hemorrhoids are due to age related changes in the ratio of muscle and connective tissue of anal canal and anal sphincter, showing an increase in connective tissue with age 3, this leads to prolapse of hemorrhoidal tissue due to loss of support by anchoring muscle fibers. Other risk

factors are constipation, straining during defecation, diarrhoea, pregnancy.³ Patient with haemorrhoids can present as bleeding per rectum, something (mass) coming out per rectum, perianal itching, Anaemia due to occult blood loss, about 30-40% of the patient can be asymptomatic. Diagnosis is made on the basis of history, physical examination and proctosigmoidoscopy.⁴

Various modalities of treatment have been developed to treat symptomatic haemorrhoids ranging from simple dietary measures and stool softeners to a number of non-operative techniques and operative excision of hemorrhoids. Nonsurgical techniques include tissue fixation by sclerotherapy, cryotherapy, photocoagulation, Laser or fixation with excision technique using rubber band ligation.⁵ Rubber band ligation remains one of the simplest and office-based procedure for the treatment of hemorrhoids with lower incidence of complications.^{6,7}

METHODS

This study was a prospective study conducted in the Department of Surgery, Government Medical College, Srinagar from June 2015 to June 2018.

Inclusion criteria

- Patients of any age with first, second or third degree haemorrhoids were included in the study. A total of 212 patients fitting into inclusion criteria were included in the study.

Exclusion criteria

- Patients with fourth degree, complicated haemorrhoids, previous anorectal surgery or anorectal pathology like fissure, fistula and chronic liver disease were excluded from the study.

All patients were subjected to thorough history taking which included age, sex, occupation, Presentation like bleeding per rectum, mass per rectum, pruritus ani and local examination like inspection, per rectum examination, proctoscopy examination and sigmoidoscopic examination.

All patients were given rectal enemas before procedure to evacuate faeces from rectum and to avoid post-procedure bowel movement.

The procedure was performed as an OPD procedure using a proctoscope and a banding apparatus, proctoscope was placed just above the dentate line allowing hemorrhoidal mass to prolapse into proctoscope; the area of proposed banding was pinched to test for sensation before banding. The hemorrhoids were drawn into the band applicator by the use of forceps, the band was then placed at the base of hemorrhoids.

The patients were followed at 2 weeks, 4 weeks, 3-month, 6 month and 1 year after the procedure and results were collected and analysed.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to data editor of SPSS Version 20.0. Continuous variables were summarized as Mean±SD and categorical variables were expressed as frequencies and percentages. Graphically the data was presented by bar and pie diagrams. Chi-square or Fisher’s exact test, whichever appropriate, was applied for categorical data. A P-value of less than 0.05 was considered statistically significant.

RESULTS

In this study, out of 212 patients, 154(72.6%) were males and 58(27.4%) females. The mean age of this study was 38.7 yr. (Range 17-73 yr.) (Table 1).

Table 1: Patient demography.

| Age (in years) | No. of patients | Percentage |
|----------------|-----------------|------------|
| 16-25 | 16 | 7.54% |
| 26-35 | 41 | 19.33% |
| 36-45 | 84 | 39.62% |
| 46-55 | 43 | 20.28% |
| 56-65 | 21 | 9.90% |
| 66-75 | 7 | 3.30% |

Patients presented with the complaints of bleeding (184, 86.8%), prolapse (114, 53.7 %), constipation (116, 54.7%), pruritis ani (36, 17.0%), pain (12, 5.6%). (Table 2).

Table 2: Patient presentation.

| Symptoms | No. of patients | Percentage |
|-------------------|-----------------|------------|
| Bleeding per anum | 184 | 86.8% |
| Prolapse | 114 | 53.7% |
| Constipation | 116 | 54.7% |
| Pruritis ani | 36 | 17% |
| pain | 12 | 5.6% |

Band ligation was successful in 188(88.8%) patients, 169(79.7%) patients were cured and in 19(8.9%) improvement was obtained. It failed to produce significant symptomatic relief in 24(11.3%) patients.

Table 3: Complications.

| Complications | No. of patients | Percentage |
|---------------|-----------------|------------|
| Pain | 12 | 5.66% |
| Bleeding | 6 | 2.83% |
| Syncope | 2 | 0.94% |
| Fissure | 1 | 0.47% |

Various complications occurred after band ligation including vasovagal syncope (2, 0.9%), bleeding per anum (6, 2.8%), pain (12, 5.6%), fissure in ano (1, 0.5%). Recurrence after one year was seen in 9(4.2%) patients out of which 7(3.3%) were managed by repeated ligation and 2(0.9%) needed surgical intervention. (Table 3).

DISCUSSION

Hemorrhoids are clusters of vascular tissues, smooth muscles, and connective tissues that lie along the anal canal in three columns-left lateral, right anterior, and right posterior positions. It affects millions of people with more prevalence in Caucasians than African Americans, and higher socioeconomic status is associated with increased prevalence.⁸ Rubber Band Ligation (RBL) is an effective out-patient treatment of hemorrhoids and rectal mucosal prolapsed as shown in a randomized trial by Marie et al, with effectiveness similar to hemorrhoidectomy in grade II and 70% effective in grade III hemorrhoids.⁹ The complications noted after RBL were no more frequent or severe than hemorrhoidectomy and were easily treated. RBL was shown to require less hospital resources and resulted in less time off work. The success rates of the method range between 79% and 91.8%.^{5,10,11} Wroblewski et al, reported that 80% of their patients improved and 69% were symptom free at a mean follow-up of 5 years.¹² There was no difference in success rates of RBL in 1st, 2nd and 3rd degree hemorrhoids.⁵ In this study, Rubber Band Ligation (RBL) was successful in 88.8% with cure rate of 79.7% and improvement in 8.9% which in accordance with the other studies as earlier stated.

Recurrence was found in 4.2% in this study which was in accordance with the study done by Vassillios et al, Bayer et al.^{5,13}

A review of 39 studies incorporating 8060 patients undergoing RBL revealed post banding complications in the form of severe pain in 5.8%, hemorrhage in 1.7%, infection in 0.05% anal fissure and fistula in 0.4%.¹⁴ In this study various complications occurred after rubber band ligation including vasovagal syncope 0.9%, bleeding per anum 2.8%, pain 5.6%, fissure in ano 0.5% which is in accordance with reviewed studies.

CONCLUSION

Author concluded in this study that RBL is an effective outpatient treatment for Grade II and III haemorrhoids. The procedure is time effective, cost effective, with minimal complications. It can be performed on OPD basis, with almost immediate return to work.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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