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Original Research Article

Comparative assessment of efficacy of artery ligation versus rubber band ligation for management of haemorrhoids in Southern Rajasthan

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ABSTRACT

Background: One of the commonest complaints presenting in the surgical out patient department (OPD) is haemorrhoids. Commonest types of haemorrhoids are grade II and III. There is a wide number of modalities that can be adopted for their management. It depends on the skill of the surgeon and preferences of the patient. The present study was designed to ascertain if two modalities of artery ligation and band ligation are comparatively equal or not in managing symptomatic grade II and III haemorrhoids in Rajasthan.
Methods: The study comprised of 100 subjects who were randomly divided in two groups based on the procedure to be followed. The subjects were told about the study and its objective.
Results: The observations reported that among the selected study population there were more relapses in band ligation as compared to artery ligation.
Conclusions: This led to the conclusion that despite its painful and traumatic methodology, haemorrhoid artery ligation still provides a better outcome.

Keywords: Artery ligation, Band ligation, Hemorrhoids

INTRODUCTION

Haemorrhoids or piles as they are commonly known are a old affliction with recorded evidence of this affliction dating back to early 19th century. The disposition affects both genders and all age groups, with an affinity for males more than females. Studies by authors have reported that an approximate 50-70% of general population may suffer from some degree of hemorrhoidal disorders in their life time, with a preponderance in males above 50 years of age.[1] Anatomically, haemorrhoids are a thick submucosal entity composed of blood vessels, mucosal membranes, smooth muscles and connective tissues. The enlargement of these structures is designated as piles in common languages. The extrusion commonly is seen in three regions viz right anterior, right posterior and left lateral aspects of the anal orifice. [2]

Clinically, hemorrhoid patients usually present with complaints of bleeding, prolapse, pain (with thrombosis or ulceration) to the general surgeon, while having signs of perianal mucous discharge, or pruritis. The complications of hemorrhoids are thrombosis, infection with inflammation, ulceration, and anemia. Management protocols in relatively asymptomatic or mildly symptomatic cases with minimal extrusion involves a dietary modification and laxatives to reduce straining during defecation. Severe cases require active surgical management.[3-4]

Etiologically, the common causes of hemorrohiods are constipation, straining, prolonged squatting, pregnancy, hereditary etc. It is now common knowledge that piles are nothing but a condition in which the anal canal structures descend downwards and protrude. The treatment

modalities are thus based on reducing the prolapse as well as inhibiting the loss of blood.[5]

Commonly used modalities include sclerotherapy, band ligation, cryosurgery, infrared coagulation, and ultrasonic doppler-guided trans-anal hemorrhoidal ligation. Surgical treatment for haemorrhoids includes open or closed haemorrhoidectomy and stapled hemorrhoidopexy.

In a majority of cases, especially in rural set ups in the country, the primary modality adopted is rubber band ligation (RBL). Studies have demonstrated that a majority of cases undergoing RBL do land back with a recurrence, while the lesser adopted method of haemorrhoid artery ligation (HAL) is better at long term effects and low recurrence.

The present study was thus adopted to provide a comparative review of the two modalities in patients treated in rural tertiary care centre in southern Rajasthan.

METHODS

The study was a prospective randomized study involving a pool of 100 subjects who were divided in two groups of 50 each based on the treatment modality adopted. The subjects were selected from amongst the patients visiting the outpatient department of Pacific institute of medical sciences, over a duration on one year from November 2019 to October 2020. The subjects were counselled regarding the study and written informed consent was obtained. Institutional ethical clearance was obtained prior to the start of the study. The inclusion criteria was-individuals with symptomatic haemorrhoids (Grade 2 or 3), above 18 years of age and no previous surgical history individuals with previous surgery, individuals with morbidities that prevented local or spinal anaesthesia were excluded. The sample size was calculated as being 100 for determining significance. Random sampling was done.

The subjects were randomly divided in two groups of 50 each. They were given similar pre operative work up in both groups. RBL and HAL were performed as per standard operative protocols. The patients were kept in recovery wards and post-operative wards prior to discharge.

The subjects were followed up at 7 days, 6 weeks and 12 months after surgery for detecting any recurrence or adverse events post procedure. The data was tabulated in MS office excel Sheets and subjected to statistical analysis using SPSS ver 19 software. The values of the central tendency and mean values were determined.

RESULTS

The study involved 100 subjects in the age group of 41-62 years, mean age of subjects was 52.4±11.7 years. The proportion of males was higher comprising of 76 (76%) of the total subjects. The subjects had majorly, grade II haemorrhoids (80%), while 20 subjects had grade III haemorrhoids (Table 1). The majority of subjects had taken medical management in form of tablets or dietary modifications (n=93). None of the subjects had any haemorrhoid related surgeries in the past. Common complaints also included constipation, straining. The 51 subjects were consuming tobacco in form of smoking or chewing. The 34 subjects reported alcohol consumption occasionally. Pre operative assessment revealed ASA grade 1 in all subjects. None of the subjects had any pre morbidities such as diabetes or hypertension.

Table 1: Proctoscopy features.

Features	Cases (%)
No prolapse	0
Prolapse-grade II	80 (80)
Prolapse-grade III	20 (20)

Recurrence rate was assessed by either self-reporting or through follow up in the selected subject population (Table 2).

Table 2: Recurrence data.

Recurrence	RBL	HAL
Self-reported recurrence	46	26
Percentage of recurrence	64	26

Among the total subject pool of 100 subjects, recurrence was reported at 6 weeks follow up by 4 individuals in RBL group, while none in HAL group reported the same. Self-reported recurrence was seen in a total of 22 individuals (14 in RBL group, 8 in HAL) group at end of 12 months. Majority of recurrences occurred in RBL group as compared to HAL groups.

In terms of adverse outcomes, no adverse outcomes were reported in RBL group. Three cases of bleeding in post operative period were reported in HAL group, which were managed on day care basis.

DISCUSSION

Based on the observations, it was apparent that recurrence rate after 12 months post operatively was lower in Hal as compared to RBL. Recurrence was considered to occur if the patients' reported symptoms of prolapse or bleeding or pain. Being a relatively benign condition, the patient response was considered as a prime indicator for asserting recurrence. Based on patient feedback and self-reporting, it was found that HAL did have a superiority in procedural success as compared to RBL. In this study, from the pool of 50 subjects who underwent RBL, 19 subjects had to undergo repeat banding or haemorrhoidectomy, depending on their preference. The majority of patients do prefer RBL even after recurrence due to relative ease of the procedure and no hospital stay.[6]

In terms of patient demographics, the data of the present study is in concurrence with similar studies by Murie et al, Konnings et al and Thakkar et al who reported a similar age and male: female ratio in their studies.[7-9]

The study showed that majority of the subjects in both groups had grade II haemorrhoids. This is similar to studies by Murie et al, Konnings et al and Thakkar et al who reported a similar scale of grades in their selected study pools.[7-9] Post intervention 54% individuals reported a satisfactory control of prolapse and bleeding in RBL group as compared to 74% in HAL group. This is on the higher side as compared with studies by Murie et al but comparable to reports by Steinberg et al who reported that the efficacy of RBL was between 55-60%.[7,10]

Our study finds concurrence with Sohn et al who reported that cryotherapy and RBL are unsuitable for treatment of large prolapsing haemorrhoids; however, they may be considered as cost-effective and acceptable treatment in short term, but in long term some patients will develop bleeding.[11]

The study is limited by the sample size and the lack of diversity in patient population. The limitations can be avoided in future studies which can employ a larger time duration for prospective analysis and reporting.

CONCLUSION

The study concludes that despite its advantages of being a rapid and relatively painless procedure, RBL must be considered as an inferior alternative to HAL as the rate of recurrence is more. Furthermore, in case of symptomatic large haemorrhoids, first line adopted must be HAL as it promotes a safer non relapsing alternative.

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

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