E-ISSN: 2616-3470
P-ISSN: 2616-3462

www.surgeryscience.com
2021; 5(2): 149-151
Received: 22-02-2021
Accepted: 24-03-2021

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Artery ligation versus rubber band ligation for management of second and third degree haemorrhoids in rural Rajasthan

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DOI: https://doi.org/10.33545/surgery.2021.v5.i2c.679

Abstract
Haemorrhoids have been a commonplace surgical problem since ancient times and recent advances have entailed a multitude of methodologies that can be adopted for its management. 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 a rural populace in Rajasthan. The study comprised of 60 subjects who were randomly divided in two groups based on the procedure to be performed. The subjects were explained the study and its objective. The observations reported that there were more relapses in band ligation as compared to artery ligation. 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 a 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 are 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, heteditary 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. Studies have demonstrated that a majority of cases undergoing rubber band ligation (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.

Methodology

The study was a prospective randomized study involving a pool of 60 subjects who were divided in two groups of 30 each based on the treatment modality adopted. The subjects were counselled regarding the study an written informed consent was obtained. The inclusion criteria was

- individuals with symptomatic haemorrhoids .(Grade 2 or 3)
- above 18 years of age
- no previous surgical history

Individuals with previous surgery, individuals with morbidities that prevented local or spinal anaesthesia were excluded.

The subjects were randomly divided in two groups of 30 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.

Observations

The study involved 60 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 46 (76%) of the total subjects. The subjects had majorly, grade II haemorrhoids (80%), while 12 subjects had Grade III haemorrhoids (Table 01). The majority of subjects had taken medical management in form of tablets or dietary modifications (n= 56, 93%). None of the subjects had any haemorrhoid related surgeries in the past. Common complaints also included constipation, straining. 31 (51.6%) subjects were consuming tobacco in form of smoking or chewing. 34 (56%) 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	48 (80%)
Prolapse - Grade III	12 (20%)

Recurrence rate was assessed by either self reporting or through follow up in the selected subject population (Table 02)

Table 2: Recurrence Data

Recurrence	RBL	HAL
Self Reported recurrence	14 (46%)	8 (26%)
Percentage of recurrence	19 (63%)	8 (26%)

Among the total subject pool of 60 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. 3 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 ascerting 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 30 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 JA, Konnings M and Thakkar NB *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 JA, Konnings M and Thakkar NB *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 JA *et al.* [7] but comparable to reports by Steinberg DA *et al*., who reported that the efficacy of RBL was between 55-60% [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].

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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