



Research Article

Open Haemorrhoidectomy versus Closed Haemorrhoidectomy: A Comparative Study

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ABSTRACT

Back ground: *Haemorrhoids are commonly encountered in routine colo rectal outpatient department. It is most common cause of rectal bleeding. Haemorrhoidectomy is an operation for third and fourth degree Haemorrhoids. This is the comparative study in between open and closed method Haemorrhoidectomy. The comparison has been done with post operative pain, bleeding, operative time, duration of stay, and wound healing in patients undergoing open and closed method Haemorrhoidectomy.*

Method: *80 patients with third and fourth degree Haemorrhoids were randomly divided in two group A (open Haemorrhoidectomy) and group B (closed Haemorrhoidectomy). Data such as personnel data, type of anaesthesia, type of operation, post operative bleeding, analgesic requirement for post operative pain, operation time, hospital stay and wound healing were collected.*

Results: *Mean operating time was shorter in open method as compare to closed method. Analgesic requirement were less in the closed method. Healing time was shorter in closed method.*

Conclusion: *The closed method is associated with less pain during early post operative period and faster wound healing.*

Keywords: *Haemorrhoids, Open, Closed, Pain, Healing time.*

Introduction

Haemorrhoids are cushions of submucosal tissue containing venules, arterioles and smooth muscles fibers that are located in the anal canal haemorrhoids or piles are symptomatic anal cushions.¹ Haemorrhoids disease is still a common problem in 5% of the general population and in 50% individuals over 50 year of age . These are supposed to be the commonest cause of per rectal bleeding². It is more common in the prosperous

societies, perhaps related to sedentary life style, diet and bowel habits⁵. Grade 1 and 2 hemorrhoids are treated by the conservative medical therapy and it is usually successful but grade 3 and 4 hemorrhoids require surgical management.

Different modalities for dealing with non complicated Haemorrhoids are medical therapy, rubber band ligation, injection sclerotherapy, cryotherapy etc.³ Haemorrhoidectomy is preferred for third and fourth degree which includes open

(Milligan Morgan), sub mucous resection (Park), closed (Hill-Ferguson) or by stapled techniques². Closed Haemorrhoidectomy is the one in which excision of the haemorrhoids is followed by primary suturing of the mucosal and skin edges with absorbable suture material like catgut. This method is stated to be better regarding healing time and other post operative complications like bleeding and post operative wound infections^{6,7,8}. Open Haemorrhoidectomy is traditional treatment of Haemorrhoids and is widely practiced in most of the hospitals. In this technique Haemorrhoidal tissue is excised and wound is left open to heal by secondary intention. The most common complications of Haemorrhoidectomy are post operative pain, bleeding, urinary retention and infection.⁴ The open and closed technique are compared in this study with respect to operating time, analgesic requirement, hospital stay, morbidity, and healing rate.

Method

The study was conducted in the Department of General Surgery at A.N. Magadh Medical College & Hospital, Gaya, over a span of 12 months. All patients with third and fourth degree Haemorrhoids were randomly assigned in two groups and operated by either the open or closed technique. Patients with concomitant ano rectal disorder like anal fissure, fistula, perianal abscess, ulcerative colitis, crohn's disease and rectal cancer were excluded. Data regarding the following variables were collected, personal data, type of anaesthesia, type of operation, post operative complications, duration of hospitalization and pattern of wound healing. Operation were carried according to Milligan Morgan (open) technique where three quadrants hemorrhoidectomy was performed and Hill –Ferguson (closed) technique where the mucosa was approximated with absorbable catgut suture. Pain was evaluated according to a scoring system based on analgesic requirement, 0 = no need of analgesia. 1 = need for analgesic once a day. 2 = twice a day. 3 = three times a day. 4 = need for opioids. Patients were sorted into two groups, low group (score 0-

2) and high group (score 3-4) analgesic requirement. The drug used for analgesia were non steroidal anti inflammatory drugs (diclofenac) and opioids (tramadol). Follow up was carried out at the first second and third week. Wound healing was assessed by inspection of the area. The total numbers of patients studied were eighty, forty patients in each group. Chi-squared test and fisher's exact test were used for statistic analysis, a p value of less than 0.05 is considered significant.

Results

A total of eighty patients were assessed 40 in each group. In the open group there were 22 males (55%) and 18 females (45%) with a median age of 39 year (range 27-65 years). In the closed group, there were 21 males (52.5%) and 19 females (47.5%) with a median age of 41 years (range 25-74 years). There was no significant difference in the median age and gender distribution. Most common presenting symptom was bleeding in 90% of patients (table 1). Types of Anaesthesia was mainly general, which has less effect on post operative pain than spinal anaesthesia (table 2). There were no difference in the median number of Haemorrhoids excised or degree of hemorrhoids between two groups. The mean operating time was significantly shorter in the open group (16.5 minutes; range 12-30 minutes) than in the closed group (25.2minutes; range 12-40 minutes) $p < 0.01$ (table 3). The duration of hospitalization was not significantly different ($p > 0.05$).

Healing time was significantly shorter in the closed group (2.8 ± 0.6 weeks) while (3.5 ± 0.5 weeks) in the open group.

Table 1 : patients preoperative characteristics and type of anaesthesia.

| Parameter | Group A (open) | Group B (closed) |
|-----------------------------|----------------|------------------|
| Age (years) | 39(27-65) | 41(25-74) |
| Male / Female ratio | 22/18 | 21/19 |
| Bleeding % | 90 | 87 |
| Soiling % | 70 | 74 |
| Pruritis % | 54 | 52 |
| Pain % | 10 | 5 |
| General anaesthesia | 35 | 37 |
| Regional (epidural, spinal) | 5 | 3 |

Table 2 : Difference in operating time , duration of hospitalization , and healing time in both groups.

| Parameter | Group A (open) | Group B (closed) | p- value |
|--------------------------|----------------|------------------|----------|
| Operation time (minutes) | 16.5 (12-30) | 25.2 (12-40) | <0.001 |
| Hospital stay (days) | 2.5±0.9* | 2.8±0.7* | >0.05 |
| Healing time (weeks) | 3.5±0.5* | 2.8±0.6* | <0.001 |

*values are mean ±SD

Table 3: Analgesic requirement during post operative course.

| Day of surgery | Group A (open) | | Group B (closed) | | P-value |
|----------------|----------------|------|------------------|------|---------|
| | Low | High | Low | High | |
| 0 | 18 | 22 | 30 | 10 | 0.006 |
| 1 | 25 | 15 | 33 | 07 | 0.045 |

Values are number of patients. Low analgesic requirement, score 0-2; high analgesic requirement, score 3-4.

Analgesic requirement was significantly higher in the open group (table 4). No mortality was encountered. In group B two patient (5%) as compare to group A where one patient (2.5%) had urinary retention which was relieved by catheterization and one had anal stenosis (2.5%) which required two session of anal dilatation under general anaesthesia in the second and third post operative months. Neither bleeding nor infections were observed.

Discussion

The lining of the anal canal is among the most richly innervated tissue in the digestive tract. Thus pain after Haemorrhoidectomy is certainly an expected postoperative sequel². A great deal emphasis has been applied on the management of pain after Haemorrhoidectomy not only because of pain but also its role in urinary retention¹⁰. Several studies have been attempted to identify the various approach to reduce post Haemorrhoidectomy pain. The choice of surgical technique has also been a subject of considerable debate. The exposed area of anal canal following open Haemorrhoidectomy has been implicated as a cause of pain. For this reason closed Haemorrhoidectomy has been advocated^{9,11}. In Milligan – Morgan (open) technique wound

healing is secondary and therefore large wound area causes pain in the first postoperative period. Anal sensation is reduced because of loss of highly sensitive anoderm and further retraction of scars can lead to stenosis of anal canal¹². This was not observed in our patients treated by this technique. The Ferguson closed technique has been reportedly associated with less discomfort, faster healing, intact post operative continence, and no need for subsequent anal dilatation¹³. In a randomized trial Arbman et al¹⁴, reported that although wound healing was considerably faster in patients operated on by Ferguson technique and there was no reduction in post operative pain.

In another randomized trial carapeti et al¹⁵, showed that there was no significant difference in the mean pain score between open and closed hemorrhoidectomy technique. In another prospective randomized trial Gencosmanoglu et al¹⁶ reported that open technique is more advantageous in that patient experience less discomfort during the early post operative period although the healing time was shorter with closed technique. A study conducted by the American society of colon and rectal surgeon did not support the assumption that closed technique was associated with significantly less pain¹⁷. In our study there was significant difference in the analgesic requirement during the post operative course in the day of operation and in the first post operative day as shown in the table 3 as demonstrated by analgesic requirement. In our study the closed technique takes longer operation time than the open technique, which was statistically significant, but there was no significant difference in the duration of hospitalization. As for healing time it was faster in closed technique than in the open technique as shown in table 2. This was similar to the results of studied by Arbman et al¹² and Gencosmanoglu et al¹⁵.

The result of this study showed that the closed technique is more advantageous with respect to less pain during early post operative period and faster wound healing.

Conclusion

Both operation close and open are safe, easy to perform and lead to satisfactory results. However the closed procedure was found to cause less post operative discomfort leading to reduced hospital stay and early return to work as healing time is faster.

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