

A Comparative Study of Open (Milligan-Morgan) Versus Closed (Ferguson) Hemorrhoidectomy

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Abstract

Introduction: Hemorrhoidectomy is an operation for third and fourth degree haemorrhoids. There are two methods by which hemorrhoidectomy can be done -open (Milligan-Morgan) in which the wound is left open and allowed to heal by secondary intension and closed (Ferguson) methods in which the wound is closed with absorbable sutures. **Aim:** To compare post operative pain and recovery in open (Milligan-Morgan) and closed (Ferguson) methods and evaluate optimum choice of the procedure for third or fourth degree hemorrhoids. **Study Design:** Prospective randomized study. **Settings:** Department of Surgery, Dr. Vasantrao Pawar Medical College, Hospital and Research Center. **Duration:** Two year (August 2010 to August 2012). **Sample Size:** 70 cases (35 cases in each group). **Inclusion Criteria:** Patients with third/four degree hemorrhoids. **Exclusion Criteria:** Patients with associated anal and perianal conditions like fissure in ano, inflammatory bowel diseases and rectal malignancy, portal hypertension were excluded from the study. **Results:** Mean hospital stay for open group was 5 days and closed group was 3 days. Post operative pain was seen in 77% in open group and 48 % in closed group. Pain was relieved earlier in closed group. 71% patients had completely healed wounds at 3 weeks in closed group in comparison to only 42% in open group. Anal stenosis was seen in 2 patients of open hemorrhoidectomy. **Conclusion:** Closed hemorrhoidectomy is the procedure of choice for three/four degree hemorrhoids.

Keywords: Ferguson, Hemorrhoidectomy, Milligan-Morgan

1. Introduction

Hemorrhoids is common disease. But there are many misconceptions regarding this disease¹. Hemorrhoids are defined differently over the period of years from simple varicosities of hemorrhoidal plexus to specialized highly vascular “cushions” of discrete masses of thick submucosa, containing blood vessels, smooth muscles, elastic and connective tissue¹.

The term “Hemorrhoid” is derived from Greek adjective meaning bleeding (Haema-Blood, Rhoos-Flowing). The term “Pile” is derived from the Latin word “Pi la”, a pill or ball³. When the patient complains of a swelling the disease is called as piles and when the patient complains

of bleeding per rectum² the disease is called as haemorrhoids.

Some degree of hemorrhoid formation is seen after 50 yr of age. Many patients never have symptoms of hemorrhoids, some patients are shy to see Doctor for haemorrhoids, so finding out the prevalence of this disease is difficult².

There are various methods of treating hemorrhoids haemorrhoids. Therapies for the topical treatment of hemorrhoids date back to Egyptian papyri of 1700 BC. Hippocrates in 460 BC described the first surgical treatment for haemorrhoids, and suggested ‘transfixing them with a needle and tying them with a very thick and large woollen thread’⁴.

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There are many aetiological factors for haemorrhoids like erect posture, constipation, straining during defecation, sedentary work, low fibre diet, heredity, high resting anal pressures.

As per clinical classification for internal hemorrhoids they can be classified into four degrees⁵. First and second degree hemorrhoids can be treated conservatively with dietary modifications, injection sclerotherapy, rubber band ligation etc. For third and fourth degree hemorrhoidal disease surgery is the treatment of choice is surgery⁶. Hemorrhoids can be treated by two types of Surgery-open (Milligan-Morgan) and closed (Ferguson) hemorrhoidectomy.

In this study we are comparing open (Milligan-Morgan) and closed (Ferguson) hemorrhoidectomy for the post operative pain, post operative recovery, wound healing, hospital stay and evaluate procedure of choice for third/four degree hemorrhoids.

2. Materials and Methods

This is a prospective randomized clinical study of management of third and fourth degree hemorrhoids by open (Milligan-Morgan)/closed (Ferguson) hemorrhoidectomy. The aim is evaluation of the post-operative pain, wound healing, post operative recovery, complications and follow up. This study has been done from August 2010 to August 2012. Seventy (70) patients with symptomatic and confirmed third/fourth degree hemorrhoids admitted in the surgical units at Tertiary care centre with medical college were included in this study. They were allocated randomly to open or closed hemorrhoidectomy.

2.1 Inclusion Criteria

All patients with symptomatic and confirmed third/fourth degree hemorrhoids.

2.2 Exclusion Criteria

Patients with associated anal and perianal conditions like fissure in ano, inflammatory bowel diseases and rectal malignancy, portal hypertension.

In this study 35 patients underwent open technique of hemorrhoidectomy and 35 patients underwent closed technique of hemorrhoidectomy

2.3 Post-Operative Course

All the patients were treated post operatively with analgesics, antibiotics and laxatives. All patients were allowed

orally the same day. Patients observed for pain. Pain was evaluated by visual analogue scale. Patients were also observed for bleeding, discharge, urinary retention post-operatively. Patients were discharged depending upon their comfortness and wound condition. The average hospital stay in each technique was recorded. Patients were reviewed after three weeks, one month, and subsequently reviewed after two months to six months. They were asked about their complaints and examined. Digital rectal examination and proctoscopy was done on each visit.

3. Results

Seventy patients were selected and randomly allocated to the procedure, 35 in each group. The age ranged from 17 years to 80 years.

Age distribution is given in Table 1.

The most common presentation of hemorrhoids in this study was bleeding per rectum seen in 90% of cases, mass per rectum 63% and painful defecation 34%.

In open group 27 (77%) patients experienced pain postoperatively which was more as compared to closed group seen in 18 (51%) patients.

Discharge was also less in closed group ($p < 0.05$).

On follow up pain was less in patients who underwent closed hemorrhoidectomy. Wound healing was complete in 25 (71%) patients in closed group at 3 weeks, in comparison to 15 (42%) patients in open group. On follow up at 3 months wound healing was comparable in both the groups. The mean duration of hospital stay for patients with closed hemorrhoidectomy was less, 3.8 days compared to 5.2 days in patients with open group.

4. Discussion

Hemorrhoids is a common disease in our society. Third and fourth degree haemorrhoids require surgery.

Table 1. Age & Gender distribution of open & Closed group

	Open group	Closed group
No. of patients	35	35
Age Range	20 – 60 years	17– 80 years
Mean age	37	39
Sex		
Male	27	29
Female	8	6
Male:female ratio	3.8:1	4.8:1

Hemorrhoidectomy can be done by two methods open (Milligan- Morgan) and closed (Ferguson) hemorrhoidectomy. Most of the patients want less stay in the hospital and early return to work. Keeping this in mind, this study was conducted to compare two procedures – open (Milligan-Morgan) and closed (Ferguson) hemorrhoidectomy and evaluate the optimum procedure for third and fourth degree hemorrhoids with regards to post operative pain, discharge, wound healing and hospital stay. In our study, we found that more number of patients presented with hemorrhoids in the age group of 31 to 40 years. Early presentation can be attributed to the changing dietary habits and lifestyle modifications leading to chronic constipation and straining for defecation and micturition. In our study male predominance was seen over females. Hemorrhoids are common in female, but due to their reluctant shy nature and fear for surgery most of the female population do not approach for any treatment and remain undiagnosed. The results of our study are compared to study conducted by⁷. The male:female ratio in our study was found to be higher than in study by⁷.

The most common symptom was bleeding per rectum, which was present in 90 % patients. Mass per rectum was present 61%. Constipation was found to be associated with 24% patients.

Most of the patients experienced pain following hemorrhoidectomy but it was more (77%) in open group than those who underwent closed hemorrhoidectomy (51%). This occurs due to low ligation incorporating the sensitive anal mucosa. Another reason for post operative pain is the presence of large raw area of anal canal wall that causes anal spasm and painful defecation. This is commonly seen after open hemorrhoidectomy. These results were comparable to study conducted by⁸ where pain following open hemorrhoidectomy was more 45% than 15 % following closed technique. Long term pain is seen in patients undergoing open hemorrhoidectomy. This is due to the excised anal canal wall leaving large raw areas.

In our study more patients (71%) had completely healed wounds following closed hemorrhoidectomy as compared to (42%) open group after three weeks. In study conducted by^{7,8}, wound healing following closed hemorrhoidectomy was 75% and 86% respectively and healing rates following open hemorrhoidectomy were 18% in both studies. There is delayed wound healing following open hemorrhoidectomy because the larger areas of anal canal walls are excised and left open. These

wounds are contaminated during defecation causing the delay in healing. Furthermore some patients may develop fistulas, abscess and later anal canal stenosis. A higher rate of wound healing was noted following closed hemorrhoidectomy as compared to open in all the studies.

Healing at 3 months in our study was comparable in both open and closed groups. The result of our study is also comparable with the study conducted by⁹. The average hospital stay for patients in open group was 5.2 days and closed group was 3.8 days in our present study. The shorter duration of stay in hospital, cost effectiveness and reliable outcome improves the patient compliance. The results of hospital stay in our study were comparable with study conducted by¹⁰ which also suggested 5 days for open group and 4 days for closed group. The data was analyzed using unpaired 't' test with significant p value ($P < 0.001$).

5. Conclusion

Closed hemorrhoidectomy leads to faster wound healing. It is a safe and effective procedure. The complications like pain, discomfort and discharge were less. The hospital stay were less in closed technique as compared to open technique. Complications like anal stenosis were not seen in the follow-up. Closed hemorrhoidectomy is the procedure of choice for third and fourth degree hemorrhoids.

6. References

1. Gordon PH, Nivatvongs S. Principles and practice of surgery for colon, rectum and anus. 1st ed. Quality Medical Publishing Inc; 1992. p. 1:10–38, 2:51–62; 8:180–97.
2. Keighley and Williams. Surgery of anus, rectum and colon. 3rd ed. Vol 1. Philadelphia: Saunders Publications; 2008. p. 351–422.
3. Russell RCG, Williams NS, Bulstrode CJK. Anus and anal canal. Bailey and Love's short practice of surgery. 24th ed. Arnold Publications; 2004. p. 1242–63.
4. Kubhchandani I, Paonessa N, Azimuddin K. Surgical treatment of haemorrhoids. 2nd ed. Springer; 2009. p. 1–5.
5. Steele RJC, Campbell K. Disorders of the anal canal. In: Cuschieri SA, Steele RJC, Moossa AR, editors. Essential Surgical Practice. 4th ed. London: Arnold; 2002. p. 634–7.
6. Ramadan E, Vishne T, Dreznik Z. Harmonic scalpel hemorrhoidectomy: Preliminary results of a new alternative method. Tech Coloproctol. 2002; 6:89–92.

7. Arbman G, Krook H, Haapaniemi S. Closed vs open hemorrhoidectomy- Is there any difference? *Dis colon rectum*. 2000 Jan; 43(1):31-4.
8. You SY, Kim SH, Chung CS, Lee DK. Open versus closed hemorrhoidectomy. *Dis colon rectum*. 2005; 48:108-13.
9. Aziz A, Ali I, Alam SN, Manzar S. Open versus closed hemorrhoidectomy: The choice should be clear. *Pakistan Journal of Surgery*. 2008;24(4).
10. Uba AF, Obekpa PO, Ardill W. Open versus closed hemorrhoidectomy. *Niger Postgrad Med Journal*. 2004 Jun; 11(2):79-83.