

Comparative Evaluation of Stapled Hemorrhoidectomy versus Open Hemorrhoidectomy

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Abstract

Background: Hemorrhoid is one of the most common diseases encountered by a surgeon on daily basis. The choice of method of treatment for hemorrhoids depends on the severity and the type of symptoms, on the degree of prolapse and on the expertise of the surgeon and available equipment. Aim of this study is to compare stapled hemorrhoidectomy with conventional Milligan-Morgan hemorrhoidectomy in terms of surgical outcomes.

Materials and Methods: Out of total of 50 patients selected, 25 underwent open and 25 stapled hemorrhoidectomy. Inclusion criteria for selection of the patients were large grade II, III and IV hemorrhoids and externo-internal hemorrhoids with well-developed external hemorrhoids.

Results: Out of 50 patients included in our study, 15 were female and 35 male. The youngest was of 25 years of age and eldest 59 years. In group A, mean operative time was 29.8 min as against 51.32 min in group B with p value <0.001. All patients of group A were virtually pain free 7 days postoperatively, while mean pain of 1.04 was still recorded at 7 days in group B patients.

Conclusion: Early functional and symptomatic outcomes have been found satisfactory and comparatively better with stapled hemorrhoidectomy. However, long-term follow-up in respect of so many factors is yet to be seen and further studies are required for this.

Keywords: Hemorrhoidectomy, Hemorrhoid, Stapler hemorrhoidectomy, Bleeding piles, Intero-external hemorrhoids

Introduction

Hemorrhoid is one of the most common and most disabling diseases man has found since the time immemorial. The etiology of the disease is linked to evolutionary changes to erect posture in human beings.¹ The term hemorrhoid is derived from Greek adjective 'haimorrhoides' meaning

bleeding and emphasizes the most prominent symptoms in majority of cases. It was first used by Hippocrates in his treatise but it cannot be actually applied to all the conditions diagnosed as hemorrhoids, as a number of them do not at time give rise to bleeding. For all such conditions, which produce swelling of some kind per anally but not bleeding, the term used is pile ('pila' – a ball).²

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The treatment of hemorrhoid dates back to the Babylonian era. Hippocrates described the treatment by cauterization, which must have been extremely painful in the pre-anesthetic era. At present, a variety of treatments are available for hemorrhoid disease ranging from advice on diet and bowel habit, through a number of non-operative methods of mucosal fixation and widening of the anus to a host of different techniques of excision of the internal anal vascular cushions and the external vascular channels.

The choice of method of treatment for hemorrhoids depends on the severity and the type of symptoms, on the degree of prolapse and on the expertise of the surgeon and available equipment. About 40% of the patients suffering from hemorrhoids require surgery.³ Conventional hemorrhoidectomy is a commonly performed operation for hemorrhoids. It has good results but is a very painful procedure resulting in a hospital stay for 4 to 10 days and time off the work for 2 to 6 weeks.⁴

The patients also face the complication of hemorrhage, which may be either immediately, reactionary, or secondary. Other complications may be a urinary retention, stenosis or incontinence. In search of surgical technique to treat the common condition of hemorrhoids, stapler has been introduced for hemorrhoidectomy. Stapled hemorrhoidectomy has come up as a promising procedure causing minimal post-operative pain, early discharge and quick return to work.

Aim of this study is to compare stapled hemorrhoidectomy with the conventional Milligan-Morgan hemorrhoidectomy in terms of the post-operative bleeding, pain, anal stenosis, period of hospital stay, and number of days required for return to work. We also tried to evaluate the advantage and disadvantage of both techniques in their own way.

Material and Methods

This randomized controlled prospective study has been carried out in the department of surgery, Dr B. S. A. Medical College & Hospital, New Delhi. Out of total of 50 patients selected, 25 underwent open and 25 stapled

hemorrhoidectomy. The patients were selected from those attending surgical outpatient department of the hospital. Inclusion criterion for selection of the patients was large grade II, III & IV hemorrhoids and externo-internal hemorrhoids with well-developed external hemorrhoids. Exclusion criteria was Grade I hemorrhoids, any associated pathology like fistula or fissure, patients above the age of 60 years and patients unwilling for procedure.

The work up of the patients was divided into preoperative evaluation, operative procedure and postoperative monitoring and follow up. Detailed history of all the patients was taken on routine basis followed by digital rectal examination and proctoscopy. All patients underwent routine investigations and complete assessment and work up for pre-anesthetic examination. At the time of induction, injection Ciprofloxacin 200 mg i.v. and injection Metronidazole 500 mg i.v. were given to all for prophylactic coverage.

Standard operative procedures were uniformly followed in each patient along with all data in terms of operating time, approximate blood loss, etc., were recorded in the specially designed proforma. All the events during postoperative period were recorded meticulously along with analgesic requirement, soakage of the pad with blood, any complications like urinary retention, etc.

All the patients were discharged for home once they required no further analgesia. They were followed up after 3, 7, 15 days, 3 months, and 6 months. During follow up, they were specially looked for anal stenosis, recurrence, incontinence, number of days required for return to work, etc.

Result

Out of 50 patients included in our study, 15 were female and 35 male. The youngest was of 25 years of age and the eldest 59 years. Over all, we found that hemorrhoid was more common in the fourth decade of life (Table 1). The duration of symptoms ranged from 2 months to 2 years.

Table 1. Age Distribution

| Age | Stapled Hemorrhoidectomy | Open Hemorrhoidectomy |
|---------------|--------------------------|-----------------------|
| Range (years) | 25–59 | 25–59 |
| Mean (years) | 41.92 | 42.52 |

In our study, incidence of grade III hemorrhoids was found to be highest in number and was 28 (n=50). Lowest incidence was of grade II hemorrhoids and it was 9 in number (n=50) (Table 2).

Table 2. Distribution of Patients as per Grades of Hemorrhoids

| Grades of Hemorrhoids | Number of Patients Group-A | Number of Patients Group-B | Total |
|-----------------------|----------------------------|----------------------------|-------|
| Very large grade-II | 05 | 04 | 09 |
| Grade-III | 13 | 15 | 28 |
| Grade-IV | 07 | 06 | 13 |
| Total | 25 | 25 | 50 |

The mean operating time for open hemorrhoidectomy was 51.32 min and 29.08 min for stapler hemorrhoidectomy respectively. This was found to be statistically significant ($p < 0.001$) (Table 3). Same way, statistically significant different ($p < 0.001$) was also found in terms of postoperative blood loss which was calculated by counting the number of gauze pieces soaked with blood and multiplying it by 10.

Table 3. Operating Time

| Group | Mean (min) | Range (min) |
|-------|------------|-------------|
| A | 29.08 | 25-40 |
| B | 51.32 | 40-80 |

Mean postoperative stay for the open hemorrhoidectomy was 3 days while for stapler group it was found to be 1.68 days. The intensity of pain was recorded by visual analogue scale and all patients of stapler hemorrhoidectomy group were pain free on the seventh postoperative day while mean pain of 1.04 was still recorded at seventh day in open hemorrhoidectomy group. The postoperative complications were also found to be relatively higher in the open hemorrhoidectomy group. The pattern of postoperative complications in detail is depicted in Table 4.

Table 4. Postoperative Complications

| Complications | Open/Group-A (n=25) | Stapled/Group-B (n=25) |
|-------------------|---------------------|------------------------|
| Hemorrhage | 05 | 02 |
| Urinary retention | 10 | 05 |
| Incontinence | Nil | Nil |
| Fecal urgency | 02 | Nil |
| Anal discharge | 02 | Nil |
| Recurrence | Nil | Nil |
| Skin tags | 4 | 1 |
| Stenosis | Nil | Nil |

Postoperative hospital stays were found to be 3 days for open hemorrhoidectomy and 1.68 days for stapler hemorrhoidectomy, and this difference was statistically significant ($p < 0.001$). Mean number of days required for return to work for open group was 8.8 days (range: 7–15 days) and stapler group 12.48 days (range: 10–15 days). This was again statistically significant ($p > 0.001$).

Discussion

Hemorrhoids are one of the most common benign anorectal surgical problem worldwide. Goligher et al. reported that about 40% of the hemorrhoid patients have to undergo hemorrhoidectomy at some time or other.⁵ Rubber band ligation, injection sclerotherapy, infrared photo coagulation, and cryotherapy have been used with some success but all have been shown to be inferior to surgery in the management of third- and fourth-degree hemorrhoids.

Criticism directed at hemorrhoidectomy relates to the pain

in the postoperative period, prolong hospital stays, and prolong absenteeism from work. Introduction of stapled hemorrhoidectomy has eliminated most of the above challenges. It has also made the surgery for hemorrhoids more patient friendly.

There were two groups in our study. Group A included the patients who had undergone stapler hemorrhoidectomy and Group B included patients with open hemorrhoidectomy. The mean age in the group A was 41.92 years and in group B 42.52 years. In the study conducted by a different researcher, the mean age group varied between 44 and 50 years in the stapled group and 45 and 47 years in the open group.^{6,7} In our study, hemorrhoid was found to be more common in the male sex, and this was comparable to the results of other studies done in the past.⁶

In various studies reported in the past, commonest hemorrhoid was found to be grade III. In our study also, 28 out of 50 patients (56.0%) had grade III hemorrhoid.

However, grade IV hemorrhoid was found to be the commonest in the study conducted by Shalaby et al.⁸ The most common complaint in our study was found to be bleeding per rectum which was in line with other studies.^{8,9}

The intraoperative blood loss was significantly less in stapled group as compared to the open group (mean 66.8 mL in group A and 168.4 mL in group B ($p < 0.001$). There was significant difference in the operative time in the two groups. In group A, mean operative time was 29.8 min as against 51.32 min in group B with p value < 0.001 . The shorter operating time taken by stapler hemorrhoidectomy is well confirmed by a number of studies. However, Ho et al. found that the conventional hemorrhoidectomy required less time as compared to stapled technique.¹⁰

The duration of stay in the hospital was significantly less in group A (mean: 1.68 days) as compared to group B (mean: 3 days) ($p < 0.001$). This result was similar to the results reported in some other studies.^{8,11} However, the duration of stay was found to be similar in the two groups as reported by other studies.^{6,10} Statistically significant difference was found in the mean pain of both groups. All patients of group A were virtually pain free 7 days postoperatively, while mean pain of 1.04 was still recorded at 7 days in group B patients.

Shalaby et al. reported urinary retention in 14 out of 100 patients (14%) in the open group as compared to 7 out of 100 (7%) in the stapled group. Ganio et al. reported 10% and 6% of postoperative urinary retention in the open and stapled groups respectively.^{8,11} This was comparable to the results of our study. Postoperative bleeding per rectum was seen in five patients in group B and two in group A. This was found to be slightly higher than the results reported by other studies.^{7,8}

With regard to return to work or routine activities there was a significant difference between the two groups. Most of the studies reported that the return to work or routine activities is much earlier after stapled hemorrhoidectomy in comparison to the open group. However, Oritz et al. reported that there was no statistical difference in the mean time to return to work.⁹ There was no recurrence found during maximum follow up of 17 months in either group which is a better result than other reported series.^{7,8}

Conclusion

The stapled procedure for hemorrhoidectomy is superior to Milligan-Morgan open hemorrhoidectomy in terms of postoperative pain, operative time and return to normal activities. It is relatively easy to learn. Early functional and symptomatic outcomes have been found satisfactory and comparatively better with stapled hemorrhoidectomy. However, long-term follow-up in respect of so many factors is yet to be seen and further studies are required for this.

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Declarations

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