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Outcome of stapled haemorrhoidectomy as a day care procedure

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Abstract
Background: Haemorrhoids are amongst the most common anal disorders. There are numerous surgical options in managing haemorrhoids. However, owing to its many advantages like decreased post-operative pain, stapled haemorrhoidectomy has gained a considerable popularity.
Objective: To study the feasibility of stapled haemorrhoidectomy as a day care procedure in the management of haemorrhoidal disease.
Methods: This study was conducted over a period of 4 years, from May 2015 to June 2019 on patients with symptomatic second-, third-, and fourth-degree haemorrhoids, who underwent stapled haemorrhoidectomy by two independent minimally invasive surgeons at different hospitals. Patient's demographic data, operative time, postoperative analgesic requirements, hospital stay and complications during the hospital stay and during the follow-up visit were collected on a prospectively designed computer-based proforma.
Results: Mean operative time was 28.22 $\pm$ 12.31 minutes; however, it varied between the different grades of haemorrhoids. The mean operative time was significantly more in patients having fourth-degree haemorrhoids and circumferential mucosal prolapse. The post-operative pain scores as measured by Visual Analogue Scale were also significantly more in the patients with fourth-degree haemorrhoids. Out of the 92 patients that underwent stapled haemorrhoidectomy, 88 (95.65%) patients were discharged on the first post-operative day with-in 24 hours of admission.
Conclusion: Stapled hemorrhoidectomy is a safe and effective technique for the operative management of haemorrhoidal disease that can be performed as a day care procedure.

Keywords: stapled haemorrhoidectomy; day care surgery; haemorrhoids; ambulatory surgery; MIPH

Introduction

Haemorrhoids are amongst the most common anal disorders. Patients may complain of bleeding, prolapse, personal discomfort, minor anal leakage and perianal itching. Where traditional non-surgical measures such as rest, suppositories and dietary advice fail to improve the condition, there is then a choice of further treatments. Stapled haemorrhoidectomy or Minimally invasive procedure for haemorrhoids is one such choice in the armamentarium of a surgeon. It was introduced in 1993 as an alternative to the Ferguson and Milligan–Morgan techniques for operative management of hemorrhoidal disease, by Dr. Antonio Longo. This procedure avoids the need for wounds in the sensitive perianal area and, as a result, has the advantage of significantly reducing the patient's post-operative pain [1].

This technique involves simultaneous excision and stapling of the circumferential column of the mucosa and submucosa in the insensitive area above the dentate line, resulting in reduction of mucosal prolapse. The excision interrupts blood flow from the branches of the superior hemorrhoidal artery, thereby reducing vascular congestion [2]. The present study evaluates the clinical outcome of stapled haemorrhoidectomy with regard to postoperative morbidity, analgesic requirement, and recurrence, specifically focussing on its feasibilty as a day-care surgical procedure.

Materials and Method

This study was conducted over a period of 4 years, from May 2015 to June 2019 on patients with symptomatic second-, third-, and fourth-degree haemorrhoids and circumferential mucosal prolapse, who underwent stapled haemorrhoidectomy by two general and minimally invasive surgeons (First and second authors) at following hospitals: Fortis Flt. Lt. Rajan Dhall Hospital, New Delhi; SMHS Hospital, Srinagar; and New City Hospital, Srinagar. Total number of procedures performed were 92.

Exclusion Criteria:

- Patients with thrombosed haemorrhoids
- Concomitant perianal fistula or abscess or anal stenosis
- Those undergoing a second procedure for the disease

All patients were admitted on the day of operation and were given proctoclysis enema 2 hours prior to surgery. Metronidazole (500 mg IV) and Ceftriaxone (1 gm IV) were given to all patients at the time of induction of anaesthesia. All the procedures were performed in Lithotomy position and under spinal anaesthesia. Sigmoidoscopy was performed in selected patients before procedure to exclude any other pathology. Stapled haemorrhoidectomy procedure was performed by following steps:

Preliminary Digital Rectal examination was done. A circular anal dilator was placed and fixed. A purse string suture of "0" number polypropylene was inserted at about 2 cm above the dentate line catching only the mucosa and the submucosa with the help of purse string suture anoscope. A well-lubricated 33 mm stapling instrument (PPH 03, Ethicon Endo Surgery, Cincinnati, Ohio) with a fully

opened position was then inserted and the anvil was positioned above the purse string. The purse string was snugged down on the shaft of the stapler and tied. The stapler was closed and held closed for 1 minute and then fired. In females, the posterior vaginal wall was checked before firing the stapler to prevent entrapment. The stapler was then fully opened with a pause of 30 seconds to its maximum and gently withdrawn. The stapled line was inspected for bleeding and any spurting point was oversewn with Vicryl 2-0. Doughnut was examined for its completeness and sent for histopathology. Small anal pack wrapped with Bactigras (chlorhexidine impregnated tulle gras) was placed which was removed invariably after 4 hours of the procedure.

Patient's demographic data, operative time, postoperative analgesic requirements, hospital stay and complications during the hospital stay and during the follow-up visit were collected on a prospectively designed computer-based proforma. The patient was permitted to take oral fluids after 6 h of surgery. Pain was assessed at 6 h, 12 h and 24 h, as per the Visual Analog Scale, and requirement of analgesia (both injectable and oral) was recorded. Inj. Diclofenac Sodium, 75 mg intramuscular, was administered to all patients who had a VAS score of more than 4 and oral NSAID (Aceclofenac 100mg plus Paracetemol 325) was given to others with VAS scores below that. Data analysis was performed with the program Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA).

All the procedures performed in this study were in accordance with the ethical standards of the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The respective Institutional Ethical Committees approved this study. All the subjects were fully informed about the purpose and nature of the study. A written and informed consent was obtained in the language they understood, and assurance regarding confidentiality was given. The study posed no financial burden on the participants.

Results

During the study period a total of 106 patients of haemorrhoids were evaluated for operative treatment; out of which 14 were excluded (eight patients were having thrombosed piles, four were having a concomitant fistula-in-ano and two were undergoing a second procedure for the disease); and thus finally 92 were included in the study. The mean age of patients was 46.39 ± 12.31 years. Sixty-three (68.47%) were females and rest were males. Twenty-six (28.26%) patients were having second-degree haemorrhoids, 42 (45.65%) were having third-degree haemorrhoids; and 24 (26.09%) patients were having fourth-degree haemorrhoids and circumferential mucosal prolapse. The most common symptom was bleeding from the anal opening during defecation.

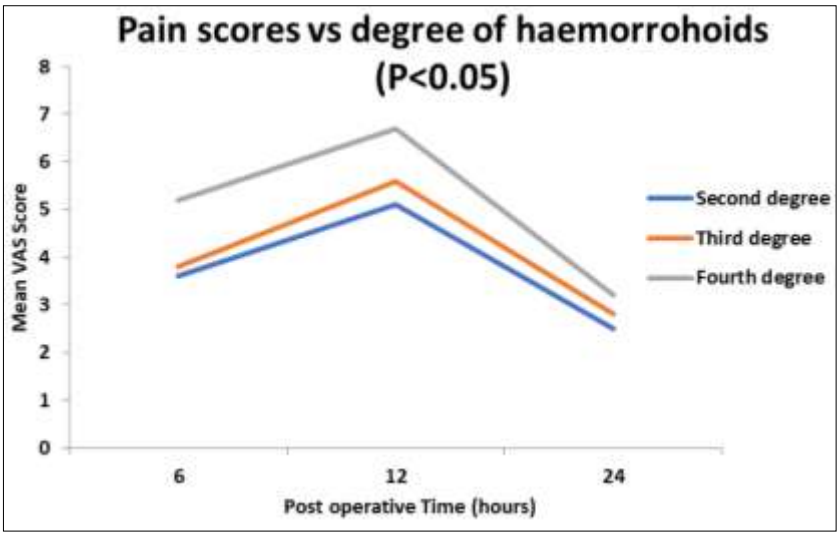

Fig 1: Post-operative pain score in different groups of patients.

The mean operative time was 28.22 ± 12.31 minutes; however, it varied between the different grades of haemorrhoids. The mean operative time was significantly more in patients having fourth-degree haemorrhoids and circumferential mucosal prolapse (37.41 ± 6.28 minutes) as compared to those having second-degree haemorrhoids (22.19 ± 8.86 minutes, $P < 0.05$). The post-operative pain scores as measured by Visual Analogue Scale were also significantly more in the patients with fourth-degree haemorrhoids [Figure 1]. with second-degree haemorroids; 1.59 ± 0.16 doses in those with third-degree the in-hospital analgesic requirements also folllowed the same pattern [1.12 ± 0.08 doses in patients haemorrhoids; and 2.31 ± 0.49 doses in those with fourth-degree haemorroids; $P < 0.05$)]. Out of the 92 patients that underwent stapled haemorrhoidectomy, 88 (95.65%) patients were discharged on the first post-operative day with-in 24 hours of admission; and three on the second post-operative day, and one on the third post-operative day. A total of four (4.35%) complications were noted – three (3.26%) of our patients complained of excruciating pain during defecation, however they all responded to oral analgesics and topical diltiazim 2%. One of our patients (1.09%) developed bleeding in the postoperative period, which required re-intervention and was managed by under-running the bleeder from the staple-line with sutures. The median follow-up of the patients is 36 months and we have not encountered any recurrence or other long-term complication like stricture till now.

Discussion

To the serious and dedicated surgeon, it would be unthinkable to expect a career without being competent

enough in the performance of surgical procedures for haemorrhoids. It would be unrealistic if not careless. Many surgical operations have been advocated for symptomatic hemorrhoids. During the past few years, stapled haemorrhoidectomy has gained popularity because of its relatively simple technique and reliable outcomes. In experienced hands, the complication rates have been lower and simpler to manage [1, 6].

Pain after haemorrhoidectomy has always been the main concern for patients to refute surgery, whereas surgeons have a major concern for controlling postoperative pain. The fact that the sensitive anal mucosa is severely traumatized during the removal of haemorrhoids by conventional surgery, results in excruciating pain in most of the patients in the post-operative period. However, in stapled haemorrhoidectomy damage to the anal mucosa, which is lifted up in the anal canal by resection of a variable ring of insensitive mucosa above the anorectal junction, is minimal. Pain is one of the prime reasons for increase in the number of post-operative hospital stay days following conventional haemorrhoidectomy. The mean operative time in our study was 28.22 $\pm$ 12.31 minutes. Similar operative times were reported by several other authors [3, 4, 5]. The post-operative pain scores as measured by Visual Analogue Scale were also significantly more in the patients with fourth-degree haemorrhoids. However, pain in most of the patients was manageable by NSAIDS and none of the patients required additional stay in hospital due to pain.

In our series, out of the 92 patients that underwent stapled haemorrhoidectomy, 88 (95.65%) patients were discharged on the first post-operative day with-in 24 hours of admission irrespective of the degree of haemorrhoids they had, suggesting that stapled haemorrhoidectomy can easily be adopted as a day care procedure. As per the definition any procedure in which the patients undergo elective operation on the day of their admission and are discharged within 24 hours of surgery qualifies for a Day Care procedure [6, 7]. This tends to reduce the brunt on the hospital resources and increases the patient satisfaction rates as they are able to return to home, and resume routine activities earlier. Studies by Riaz *et al*. [8], Robinson *et al*. [9], Diurni *et al*. [10] have also found in their respective studies that stapled haemorrhoidectomy can be performed safely as a day care procedure.

One of the limitations of the current study is that it was not a randomized controlled study, but we enrolled all the patients planned for stapled haemorrhoidectomy, thus trying to minimize the selection bias. We acknowledge the fact that stapled haemorrohoidectomy requires costly disposable equipment, which cannot be afforded by everyone in a resource depleted country. But this is offset by the fact, that since patients are discharged early and consequently resume their routine activities sooner, the over-all costs decrease. However, a detailed analysis needs to be done in future to ascertain these facts. Ours was a multi-centric study adhering to a single robust protocol thereby adding to the strength of the study. The other strength of our study is that well-experienced surgeons who had completed their learning curve did the procedures.

Conclusion

This study supports the evidence that stapled hemorrhoidectomy is a safe and effective technique for the operative management of haemorrhoidal disease that can be performed as a day care procedure.

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