

Comparative Evaluation between Stapled Haemorrhoidopexy and Open Haemorrhoidectomy in Patients with Grade II & Grade III Haemorrhoids: A Prospective Study

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Received: 04-07-2023 Revised: 17-08-2023 / Accepted: 22-08-2023

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Conflict of interest: Nil

Abstract

Background: Hemorrhoids are one of the most common anorectal conditions hampering day to day life of an individual. Stapled hemorrhoidectomy has been shown to be a better alternative to open hemorrhoidectomy with lesser postoperative pain & early resumption of daily activities.

Aims & Objectives: To compare open hemorrhoidectomy and stapled hemorrhoidectomy in the surgical management of grade II & grade III hemorrhoids.

Material & Methods: This prospective study recruited 70 (20-70 yrs) patients with grade II and III haemorrhoids, undergoing either open or stapled haemorrhoidectomy. A detailed history taking, local & systemic examinations were conducted & the patients were randomized into two groups: Group O - Patients undergoing open haemorrhoids surgery (n= 35); Group S - Patients undergoing stapled haemorrhoids surgery(n=35). The parameters assessed were the duration of surgery, Intra-operative bleeding, post-op pain using Visual analogue scale, post-op complication - bleeding, urinary retention and anal incontinence, duration of post-op stay at the hospital.

Results: The operating time, intraoperative bleeding, and postoperative pain Scores were statistically significantly higher in Group O as compared to Group S (p<0.05). Two patients in Group O & one in Group S experienced postoperative bleeding, which was managed by inj. tranexa i.v. 8 hourly. Postoperative urinary retention was observed in 4% of patients in Group O and 11% in Group S and was catheterized if needed. Faster resumption of daily activity with a lesser number of hospitalization days was observed in Group S as compared to Group O (p<0.05).

Conclusion: Stapled hemorrhoidectomy offers promising results over open hemorrhoidectomy with less postoperative pain, reduced hospital stay & faster resumption of daily activity.

Keywords: Stapled hemorrhoidectomy, open hemorrhoidectomy, haemorrhoids, anorectal conditions

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Introduction

Hemorrhoids are referred to as anal cushions that swell, bleed & thrombose and prolapse causing clinical symptoms.[1] The clinical symptoms are discomfort, itching, mucous discharge, bleeding, pain, and prolapse associated with a feeling of fullness and incomplete evacuation. The disease is prevalent in less than 40 age groups with male predominance.[2] They are common findings in obesity, constipation, and pregnancy.[3] They can be grouped as external & internal hemorrhoids. External hemorrhoids are aggregations of congested external perianal vascular plexus covered by perianal skin; while internal hemorrhoids originate from the sub-epithelial plexus of the anal canal

above the dentate line .[4] Internal hemorrhoids are classified based on the degree of prolapse into grades.[5]

The symptomatic hemorrhoids are managed conservatively by dietary & lifestyle modifications & medications.[6] For grade III and grade IV hemorrhoids , surgical management is essential.[7] The Gold standard technique is Milligan Morgan hemorrhoidectomy which has the benefits of long-term efficacy & cost effectiveness.[8] But this technique is also associated with a high incidence of post-operative complications like urinary retention, hemorrhage, prolonged wound healing, &

postoperative pain due to wide external wounds in the anal skin.[9]

A novel approach to the surgical treatment is Stapled hemorrhoidectomy with its relatively lower complications & decreased number of hospital stays. In this technique, the size of internal hemorrhoids is decreased by interrupting the blood supply which in turn reduces the dimensions of vascular cushions & potential relapse of rectal mucosa is reduced. Research has shown stapled hemorrhoidectomy to be less painful, and less postoperative complications with a faster rate of recovery as there is no perianal wound & rectal wall above the dentate line has insensitive mucosa.[10] Thus the present prospective study aimed to compare open hemorrhoidectomy and stapled hemorrhoidectomy in the surgical management of grade II & grade III hemorrhoids in terms of outcome, postoperative complications, resumption of routine daily activity & postoperative hospitalization.

Material & Methods

This prospective study was conducted in the Department of General Surgery of our Tertiary care hospital from February 2022 to July 2023 a period of 1.8 years. Patients having symptomatic grade II and III haemorrhoids, undergoing either open or stapled haemorrhoids surgery in the 20-70 yrs age group were included in the study.

Patients with bleeding diathesis, previous ano-rectal surgeries & recurrence cases, perianal haematoma, associated anal pathologies like acute anal fissure, perianal abscess anal stenosis, fistula-in-ano, abscess and rectal prolapse, secondary causes of haemorrhoids like portal hypertension, pregnancy, and rectal malignancy, previously operated patients with recurrence were excluded. A detailed history taking, local examination (digital rectal examination and proctoscopy) & systemic examinations were conducted for definitive diagnosis of grade III & IV haemorrhoids. A written informed consent was obtained from all patients & data confidentiality was maintained. The study was approved by the institutional ethics committee.

The patients were randomized into two groups:

Group O - Patients undergoing open haemorrhoids surgery (n= 35)

Group S - Patients undergoing stapled haemorrhoids surgery(n=35)

Surgery -

Preanaesthetic assessment of the study participants was conducted & relevant investigations were carried out i.e. complete blood counts, blood grouping, random blood sugar, serum creatinine, chest X-ray, bleeding time and clotting time, Anti-Human Immunodeficiency Virus (HIV) and

Hepatitis B surface Antigen (HBsAg). Enema was given in the early morning of surgery & before surgery. Thirty-five patients underwent open haemorrhoidectomy and thirty-five patients underwent stapled haemorrhoidectomy, external dressing was applied. Patients were evaluated at regular follow-ups.

Postoperative assessment-

VAS scale was used to measure pain, with 0 denoting no discomfort and 10 denoting the greatest pain ever. On postoperative day 1, pain was recorded six hourly, at the moment of the first motion & then once every day for seven days.

The pain scores were kept below score 5 using analgesics. According to The World Health Organisation (WHO) classification system of grouping prescribed analgesics, paracetamol was prescribed to the patients. (Anekar 2022)

Along with analgesics, patients were prescribed ciprofloxacin 500 mg twice daily, metronidazole 400 mg three times daily, and lactulose syrup 20 mg once for two weeks. Group O patients were instructed to sitz bathing twice daily for two weeks. When pain management was adequate & patient managed on their own, they were discharged. Patients were instructed to report immediately in case of emergency. A recall follow-up was scheduled at one week, 3 weeks, and 6 weeks to 10 weeks after surgery. Questionnaire was prepared & patients were made to rate their symptoms, level of faeces and flatus continence, time taken to resume their daily activities & painful defecation, and pus discharge from the wound.

The parameters assessed were:

1. Duration of surgery (from positioning the patients in lithotomy position to placement of anal pack)
2. Intra-operative bleeding (measured with the number of gauze pieces used, with one quantifying 5ml of blood loss)
3. Post-op pain using Visual analogue scale (VAS)
4. Post-op complication - bleeding, urinary retention, and anal incontinence
5. Duration of post-op stay at the hospital.

Statistical Analysis

The collected data was tabulated in an excel spreadsheet & put to statistical analysis. The data was expressed as mean and standard deviation & percentage. The difference between Group O & Group S was tested using Independent Student's t-test. P value <0.05 was considered statistically significant.

Results

Both the groups were comparable concerning age, gender & grade of haemorrhoids with no statistically

significant difference. (Table 1) The operating time was statistically significantly higher in Group O as compared to Group S ($p < 0.05$). The intraoperative bleeding was statistically significantly higher in Group O as compared to Group S ($p < 0.05$). Two patients in Group O & one in Group S experienced postoperative bleeding, which was managed by inj. tranexa i.v. 8 hourly. Postoperative urinary retention was observed in 4% of patients in Group O and 11%

in Group S and was catheterized if needed. No emergency was reported. Postoperative Pain Scores were statistically significantly higher in Group O as compared to Group S. Faster resumption of daily activity was observed in Group S as compared to Group O ($p < 0.05$). Lesser number of hospitalization days required in Group S as compared to Group O ($p < 0.05$). (Table 2)

Table 1: Baseline Variables in Group O & Group S

Variables	Group O (n, %)	Group S (n, %)	p-value
Gender			
Male	32(91.42%)	30(85.71%)	$p > 0.05$
Female	3(8.57%)	5(14.2%)	$p > 0.05$
Age (mean \pm SD) (yrs)	41.6 \pm 4.62	39.8 \pm 3.61	$p > 0.05$
Grading of haemorrhoids			
Grade III	31(88.57%)	32(91.42%)	$p > 0.05$
Grade IV	4(11.4%)	3(8.57%)	$p > 0.05$

Table 2: Postoperative outcomes in Group O & Group S

Variables	Group O (n, %)	Group S (n, %)	p-value
Postoperative bleeding	2(5.71%)	1(2.8%)	$p > 0.05$
Postoperative urinary retention	4%	11%	$p < 0.05$
Postoperative Pain Score (VAS)	6.21 \pm 0.86	3.45 \pm 0.95	$p < 0.05$
Resumption of daily activity (days)	4.62 \pm 0.84	3.28 \pm 1.49	$p < 0.05$
Postoperative hospitalization days	2.67 \pm 0.74	1.56 \pm 0.54	$P < 0.05$

Discussion

Haemorrhoids are frequently occurring anorectal conditions affecting 4-36% of the population. Stapled haemorrhoidectomy was proposed by Dr. Antonio Longo in 1998, as an alternative to open haemorrhoidectomy. It is also known as circular stapled rectal mucosectomy.[9]

In the present study, both Group O & Group S were comparable concerning age, gender & grade of haemorrhoids with no statistically significant difference ($p > 0.05$). (Table 1) The mean age in Group O was 41.6 \pm 4.62yrs while in Group S was 39.8 \pm 3.61 yrs. The incidence of haemorrhoids was observed to be more in males in both groups.

In the present study, the operating time & intraoperative bleeding were statistically significantly higher in Group O as compared to Group S ($p < 0.05$). Accordingly, Malyadri N et al 2021 study observed the median time of the procedure to be 40 min in Stapled haemorrhoidectomy as compared to 50 min in open haemorrhoidectomy (P value < 0.001). The median intra-operative bleeding was statistically significantly higher in the stapled group (5ml) as compared to the open Group(38ml).[11]

In the present study, postoperative bleeding was statistically significantly higher in Group O. Similarly, Malyadri N et al 2021, noted post-operative bleeding to be only 2ml in the stapler haemorrhoidectomy which was statistically

significantly lower (P value < 0.001).11 Similar findings were observed by Dr.Mohan S V et al [12] & Parmar AJ 2022.[13] In contrast, Kim JS et al. 2013 noted the postoperative bleeding rate to be the same at 4.9 % in both groups.[14]

In the present study, postoperative urinary retention was higher in Group S as compared to Group O. Accordingly, Parmar AJ et al 2022, postoperative urine retention was reported to be 8% in the stapled & 4% in the open haemorrhoidectomy group.13 The exact etiology of urinary retention following haemorrhoidectomy is not completely understood, there may be a dysfunction of the detrusor muscle or the trigone in response to pain or distention of the anal canal or perineum.15 A study by Zaheer et al observed that patients receiving adequate analgesics had a lower incidence of urinary retention and inferred that retention was related to postoperative pain. 16 Also, the use of spinal anesthesia is associated with a higher incidence of postoperative urinary retention because of its sympathetic blockade.[15]

In the present study, postoperative pain scores were significantly less in Group S. Similar findings were reported by Gravies J F et al. [17], Kim JS et al.[14], Daniel R et al [18], Malyadri N et al[11]. Bhandari RS et al. reported better short-term outcome in patients undergoing stapled procedures with regard to postoperative pain & analgesic requirements. The reduction in pain scores can be attributed to the lack of nerve endings above the dentate line since the

procedure was carried out above the dentate line.[19]

In the present study, resumption of daily activity (days) was faster in Group O. Similarly, Malyadri N et al 2021 reported a statistically significant difference between the groups in terms of early resumption to normal activity.[11] Other studies substantiating these findings are studied by Mehigon BJ et al.[20], Tjandea JJ et al. [21], Nisar PJ et al.[22]

In the present study, post-operative hospital stay was statistically significant less for Group S than Group O (P value <0.001). Similar findings were observed in the study conducted by Daniel R et al. [18], Malyadri N et al 2021[11] & RS Bhandari et al.[19]. This is in contrast to Mehigon BJ et al. [20] studies which observed no such difference. A systemic review conducted by Tjandra JJ et al. [21], reported significantly fewer days of post-operative stay for stapler haemorrhoidectomy as compared to the open hemorrhoidectomy group. This could be attributed to the lesser post-operative pain & early resumption of daily routine activity.

Conclusion

Stapled Haemorrhoidopexy is a relatively safer procedure with better short-term outcomes, faster recovery, less postoperative pain, early resumption of daily activity, and reduced postoperative hospitalization. Thus, being preferable to both surgeon & patient, it should be readily taken as a favourable option over traditional open Haemorrhoidectomy.

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