Postoperative Recovery Profile of the Patients Undergoing Conventional and Stapler Hemorrhoidectomy

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Abstract:-

> Introduction:

A unique technique for managing prolapsed hemorrhoids surgically involves stapled hemorrhoidectomy. Compared to open hemorrhoidectomy, it resulted in quicker convalescence duration despite a significant increase in cost. The aim of the study was to compare the effectiveness, short- and long-term outcomes, and post-operative complications of open vs staped.

> Methods:

60 patients in the age group 20 to 50 years, weight 45-80 kgs, and ASA grade of I and II were elected for the surgery, diagnosed with hemmorid grad III and IV and were divided into two groups. Group I contains 30 Patients operated under Open hemorrhoidectomy/ Milligan Morgan and Group- II 30 Patients operated under Stapler hemorrhoidectomy.

> Results:

Results were found to be better with the staple technique. There was significantly less pain in the postoperative period with faster recovery, There was no postoperative infection in the SH patients, early resumption to walk, reduced postoperative complications of the patients operated by the SH technique as compared to open technique.

> Conclusion:

Stapler haemorrhoidectomy requires less intraoperative time, less hospital stay and less post-operative pain. Return to normal activity is also faster with stapler surgery then open haemmorrhoidectomy.

I. INTRODUCTION

Regarding serious hemorrhoids (grade II-IV), the most used surgical procedures are stapled haemorrhoidopexy and conventional excisional surgery. Anal cushions that 'grow', 'bleeding' 'thrombose', 'prolapse', and generate clinical symptoms are referred to as hemorrhoids (Zhang et al. 2020). Whereas internal hemorrhoids begin in the subepithelial plexus located inside the anal canal above the dentate line, external hemorrhoids are masses of packed exterior perianal vascular plexus surrounded by perianal skin. Four stages of prolapse can be used to categorize internal hemorrhoids, however, this may not accurately represent the seriousness of the symptoms a person experiences (Coelho et al. 2020). The symptoms are linked to a sense of fullness and inadequate evacuation, including unease, irritation, mucosal release, pain, bleeding, and prolapse. The only symptoms of first-degree hemorrhoids (FDH) are bleeding and non-prolapse. Conservative treatment of symptoms with a high-fiber diet and softened stool is believed to be effective. Defecation-only bleeding with prolapse indicates second-degree hemorrhoids (SDH). Band attachment and injection sclerosis treatment are extremely effective treatments for SDH4,5. Third and fourth-degree hemorrhoids are characterized by severe illness with significant prolapse, bleeding, and other problems needing major surgical intervention (Al-Thoubaity, 2020). The treatment of hemorrhoids in the third and fourth degree is frequently hemorrhoidectomy. Hemorrhoids can expand and prolapse and are high in vascular supply. From minor bleeding and stinging to severe discomfort, symptoms can vary. Sadly, due to the location, a lot of people never come for therapy for humiliation-related anxiety. First-line treatment is usually conservative, and a doctor with primary care can start this. Patient education is crucial. An anorectal surgeon can treat hemorrhoids that are severe or ongoing using a variety of techniques. Traditional therapy, which includes changes in diet and lifestyle along with the use of various medicinal products can be used to manage painful hemorrhoids. Surgery is the suggested plan

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of treatment for individuals who have grade III and grade IV hemorrhoids and they do not show any positive result of any other treatment (Anh et al. 2024). Surgery is not the only option and it should be better to avoid this for hemorrhoids of the first and second degree. However, the most often used surgical procedure for treating third and fourth degree hemorrhoids is the Milligan Morgan hemorrhoidectomy, regarded as the precious method today. It continues to stand over the years due to its lower rate of complications after the surgery, affordability, and better long-term outcomes. Fergusons' conventional hemorrhoidectomy has garnered significant attention in several areas of the world due to its reduced post-operative pain, which is thought to be caused by the mucosa's cut edges closing, quicker wound healing, and excellent patient adherence (Nallajerla & Ganta, 2021). The treatment of stapled hemorrhoidectomy is a good technique for treatment as it has a low chance of complications and requires a few days stay in hospital yet it is an expensive procedure of treatment. The open hemorrhoidectomy which is a traditional procedure to treat hemorrhoids is relatively more affordable than stapled, however, it causes discomfort and pain after the surgery and also creates other complications in the patient (Chhikara, Bharti, & Sethi, 2020).

- Objectives of the Study
- To compare the time of ambulation in both groups.
- To evaluate the duration of hospital stay of all the patients.
- To differentiate the incidence of surgical site infection in both groups.
- To access in postoperative analgesic requirement in both the groups.

II. MATERIALS AND METHODS

The study entitled "A study on the comparison of postoperative recovery profile of the patients undergoing conventional and stapler hemorrhoidectomy" was carried out at Florence Hospital between January 2024 to June 2024, located in Chanpora, Srinagar, J & K, Bharat, after receiving the approval from the hospital ethical committee.

A total of 60 patients between the age group 20 to 50 years, of weight 45-80 kgs, with ASA grade of I and II who were diagnosed with grade III and IV hemorrhoids, were divided into two groups equally. Group- I 30 Patients operated under Open hemorrhoidectomy/Milligan Morgan and Group-II 30 Patients operated under Stapler hemorrhoidectomy

➤ Inclusion Criteria:

- ASA category I and II.
- Age group between 20-50 years.
- weight 45-80 kgs
- BMI < 35 kg/m².
- Patients with ability to provide informed consent.
- Hemorrhoid grade III and IV

Exclusion Criteria:

- BMI greater than 35 kg/m².
- ASA grade III or more.
- Age more than 50 years.
- weight more than 80 kgs.
- Active bleeding disorders or those on anticoagulants.
- Inflammatory bowel diseases.
- Pregnancy

Pre-Anaesthesia Checkup:

Pre-anaesthesia care included a thorough clinical history and assessment of the patient, as well as the ordering of standard tests such as blood sugar, hematocrit, liver function testing, renal function testing, coagulogram, ECG, and chest X-rays. Before surgery, all the patients were advised to not to take anything orally before the 8 hours of surgery (NPO).

III. METHDOLOGY

On arrival into the operation theatre, all the patients were cannulated and Ringer's Lactate 10-15 ml /kg (500-1000 ml) was started preoperatively. All the intravenous fluids administered were stored at room temperature. All the routine monitors (ECG, Pulse Oximeter, NIBP) were applied and the baseline vitals were recorded. The temperature in the Ot was adjusted in between 22-25°C. Under all aseptic precautions guidelines the SA was given to patients in the sitting position by using Quincke's needle (25G) into the L3-L5 space. Injection Bupivacine Heavy was injected in subarachnoid space after observing free tech flow of CSF through spinal needle. After the sensory and motor blockade was achieved Patient was then giving lithotomy position. Proctoscopy examination was done. A transparent anal dilator was gently inserted.

In the open hemorrhoidectomy an artery forcep was placed over one haemorrhoidal pedicle and suture ligature was made at the apex of the haemorrhoidal pedicle. The hemorrhoid was cut and removed; the wound was left open to heal. The procedure was repeated for the remaining hemorrhoid pedicles, and hemostatic dressings were plugged into the anal canal. This technique was formulated by Drs. Milligan and Morgan in the year 1937 and is currently recognized as the gold standard in the surgical management of hemorrhoids because of its flexibility in the achievement of complete excision of hemorrhoids (*Pata et al. 2021*).

In the stapler hemorrhoidectomy it involves making the circular, hollow cylinder pass through the anus and then surrounding the internal hemorrhoids by making a stitch at a higher level. A circular stapler was inserted through the tube, secures and trims the free margin of the open wound at the upper and lower ends simultaneously. This technique aims at repositioning the hemorrhoidal tissue has less post-surgical pain than in the open method and has a shorter recovery time (*Fišere et al. 2023*). This technique of stapler haemorrhoidectomy is encouraged predominantly on the advanced forms of hemorrhoids or the higher grade

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hemorrhoids where excision of the tissue is favoured as compared to mobilization.

- > Parameters were Recorded:
- Demographic (age, weight of the patients, gender of the patients, and total duration of surgery).
- In open hemorrhoidectomy (pain, surgical site infection (SSI), total time taken for the ambulation and total hospital stay duration) were recorded.
- In staple hemorrhoidectomy (pain, surgical site infection (SSI), total time taken for the ambulation and total hospital stay duration) were recorded.
- In post operative period, pain at surgical site was checked as soon the patients reaches in post operative area. After then the pain assessment was done at 6th ,6th and 12th hour intervals as per the duties of nursing staff. Visual analog scale 10cm was used for scoring of pain. At vas score more than 5 parenteral analgesic was given to the patients.
- The surgical site infection (SSI) was checked at the time of dressing of surgical site every time.
- The time of Ambulation were noted when the patients walks to washroom to pass urine.

The duration of hospital stay was calculated from the time of admission of the patient in hospital till the time discharge.

IV. RESULTS AND ANALYSIS

Table 1 Shows the Demographic Variables						
Variable	Group I	Group II	P value			
Age (years)	34.43 ± 7.8	32.56 ± 6.4	0.3143			
Weight (kg)	59.66 ± 10.71	64.63 ± 8.9	0.0554			
Gender (M/F)	16/14	18/12	0.532			

The data is mean \pm SD for all the demographic features of both the groups.

P > 0.05 - insignificant (NS)

The demographic variables, age, weight, gender, were comparable in both the groups.

Table 2: Shows the Comparison of the Total Surgery Duration among the Groups

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(minutes)	61.33 ± 4.21	47.16 ± 4.33	< 0.0001

The data is mean \pm SD for comparison of surgical duration in both the groups.

P <0.05 – significant (NS)

Table 2 shows that, the duration of surgery in Group I was 61.33 ± 4.21 minutes and 47.16 ± 4.33 minutes in Group II and when compared statistically using student's t-test, the difference in the duration of surgery in both the groups was significant (P < 0.05) (Table 2)

Table 3 Comparison of outcome Variables among Both the	e Two Groups.	
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Group I	Group II	p-value
4.46 ± 0.86	2.43 ± 0.868	< 0.0001
10 (33.33%)	0	< 0.0001
12.6 ± 1.438	8.43 ± 0.86	< 0.0001
4.3 ±0.851	2.5 ±0.454	< 0.0001
	Group I 4.46 ± 0.86 10 (33.33%) 12.6 ±1.438 4.3 ±0.851	Group IGroup II 4.46 ± 0.86 2.43 ± 0.868 $10 (33.33\%)$ 0 12.6 ± 1.438 8.43 ± 0.86 4.3 ± 0.851 2.5 ± 0.454

Table 3 shows that mean vas score in group I after 12 hour after surgery was 4.46 ± 0.86 and 2.43 ± 0.868 in group II and when compared statistically using student's t-test, the difference in the vas score of the patients in both the groups was significant (P < 0.05) (Table 3)

33.33% of patients possessing surgical site infection in group I and none of the patients in group II possessing surgical site infection and when compared statistically using student's t-test, the difference in the percentage of surgical site infection of the patients in both the groups was significant (P < 0.05)

The time taken for the ambulation in group I was 12.6 \pm 1.438 hours and 8.43 \pm 0.86 hours in group II and when compared statistically using student's t-test, the difference in the ambulation of the patients in both the groups was significant (P < 0.05)

The comparison of hospital stay in group I was 4.3 ± 0.851 days and 2.5 ± 0.454 days in group II and when compared statistically using student's t-test, the difference in the hospital stays of the patients in both the groups was significant (P < 0.05)

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V. DISCUSSION

In this study we evaluated that study on the comparison of postoperative recovery profile of the patients undergoing conventional and stapler hemorrhoidectomy. Various parameters were assessed including demographic characteristics, total time of surgery, hospital stay, surgical site infection, ambulation time and pain management to determine the comparative recovery profile in the both the surgeries.

60 surgical patients between the age group 20 to 50 years, having weight 45-80 kgs, with grade of I and II ASA, were diagnosed with III and IV grade hemorrhoids, and were divided into two groups equally.

Group-1 operated under Open hemorrhoidectomy and

Group II Patients operated under Stapler hemorrhoidectomy.

The initial evaluation of demographic and baseline characteristics such as age, weight, gender, ASA grade, showed no significant differences between the two groups.

➢ Duration of Surgery

The analysis revealed that the duration of the surgeries were similar across both the groups. In our study the duration of surgery in Group I was 61.33 ± 4.21 minutes and 47.16 ± 4.33 minutes in group II and when compared statistically using student's t-test, the difference in both the groups was statistically significant (table 2)

Shukla S et al. also found similar results in with the duration of surgery for patients' operated under open hemorrhoidectomy as 44 ± 5 minutes while patients operated under stapler hemorrhoidectomy as 39.75 ± 5.73 minutes (p< .001). **Gravie et al.** also found that Stapled hemorrhoidectomy is faster than the Milligan-Morgan technique (21 minutes versus 31 minutes)

➤ Vas Score

The mean vas score recorded in our study at the end of 12 hours in group I was 4.46 ± 0.86 hours and 2.43 ± 0.868 in group II and when compared t, the difference in the vas score in both the groups was statistically Significant and p value was 0.0001 (P < 0.05) (table 3).

Thejeswi et al. found that the average vas scores on post-operative day 1, 2 and day 3 in the SH group was as 3.8, 2.4 and 1.6 as against 5.4, 4.3 and 3.9 in the OH group, respectively (p<0.01)

Mostafa M. Salama et al. found that, SH resulted in 3 fewer visual analog scores for postoperative discomfort than OH group.

Surgical Site Infection.

33.33% of patients possessing surgical site infection in group OH and none of the patients in group SH possessing SSI and when compared statistically using student's t-test,

the difference in the percentage of surgical site infection of the patients in both the groups was significant (P < 0.05).

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> Ambulation

Time taken for the ambulation in group I was 12.6 \pm 1.438 hours and 8.43 \pm 0.86 hours in group II and when compared statistically, the difference in the ambulation of the patients in both the groups was significant (P < 0.05) (Table 3,)

➤ Hospital Stay

Hospital stay in group I was 4.3 ± 0.851 days and 2.5 ± 0.454 days in II group, when compared statistically using student's t-test, was significant (P < 0.05) (Table 3,)

Severa studies may be compared to this. An early return to regular daily exercise was determined by **Mehigan B. J. et al.**

Mostafa M. Salama et al. Found that in SH group patients begun their dail activites faster than OH group.

The results of systematic reviews by **Tjandea J. J. et al.** and meta-analyses **by Nisar P. J. et** al. clearly show that patients who were operated under stapled hemorrhoidectomy returned to their regular daily activities earlier than the patients operated under OH.

In our study it shows that the average length of hospital stay was lower in the open group, as compared to staple group which is very important in developing countries where daily wages are mostly involved.

VI. CONCLUSION

Stapled hemorrhoidectomy is a less painful and more successful surgical procedure than conventional hemorrhoidectomy. The benefits of stapler hemorroidopexy have been noted in the current study with less operatingtime, decreased between and after surgery bleeding, and decreased pain following the procedure, which may result in recovery and fast discharge with the patient's thought of satisfaction, no matter of other complications. Experts might easily and securely modify this method and present patients with this choice.

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