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COMPARATIVE STUDY BETWEEN STAPLER HAEMRRHOIDOPEXY AND OPEN HAEMRRHOIDECTOMY

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Abstract-

Background- Hemorrhoids are one of the most common diseases of mankind, affecting 4%–36% of the general population. Naturally present anal cushions that generate clinical symptoms (expand, bleed, become thrombosed, or prolapse) are referred to as hemorrhoids.

Aim- To study the outcome of stapler haemrrhoidopexy versus open haemrrhoidectomy.

Methods and materials- This prospectivet study was conducted in the department of General Surgery, Sri Aurobindo Medical College and PGI, Indore, Madhya Pradesh, India over 18 month duration from September 2022 to February 2024. this study comparing Open versus Stapled hemorrhoidopexy for the management of Grade 3 and 4 hemorrhoids. Study was conducted on 80 patients admitted and operated for hemorrhoids at our institute who fulfilled the inclusion and exclusion criteria.Data was collected by using Proforma. The patients were categorized into two study groups (each included 40 patients): group 1 was treated by stapled hemorrhoidopexy, and group 2 had conventional hemorrhoidectomy.

Results- Of 80 patients, 57 (71.25%) were males and 23 (28.7%) were females. The maximum number of patients (65%) belonged to the age group 31 to 50 years. The predominant symptom was bleeding per rectum in 65% of cases followed by Something protruding out of the anal canal 50 % of cases. The operating time (p= 0.04) and hospital stay (P=0.0003) were much less in the stapler hemorrhoidectomy group as compared to the open procedure group. Also, postoperative pain (visual analogue scale)(p=0.01) was less in the stapler hemorrhoidectomy group. The stapler group had an early return to normal activities as compared to the open hemorrhoidectomy group(P=0.02).

Conclusion- We have concluded that stapled hemorrhoidectomy has good patient compliance, less complications and better outcome. It may be a good choice for treating hemorrhoids of the third and fourth grades. Additional clinical trials are also required to validate our study's findings. In order to prevent a recurrence, it is also essential that patients receive dietary and lifestyle adjustments in addition to surgical care. It is advised to conduct additional research with a larger patient population and a longer follow-up duration in order to provide more positive findings.

Keywords- hemorrhoidectomy, stapler, complications, postoperative pains, bleeding.

INTRODUCTION-

Hemorrhoids are one of the most common diseases of mankind, affecting 4%–36% of the general population. Simply, naturally present anal cushions that generate clinical symptoms (expand, bleed, become thrombosed, or prolapse) are referred to as hemorrhoids [1].Two types are described- internal haemorrhoids, which originate from the anal canal's sub-epithelial plexus above the dentate line and external haemorrhoids which are collections of congested external perianal vascular plexus that are covered by perianal skin [2]. IH are further classified according to degree of prolapsed into four degrees, 1st and 2nd degree hemorrhoids can be managed conservatively, therefore surgery is not viable and better avoided. Whereas for the management of third and fourth degree hemorrhoids is usually surgical[3]. Milligan-Morgan hemorrhoidectomy has been the most popular among the various surgical techniques performed[4]. Surgical hemorrhoidectomy has been reputed as being a painful procedure for a benign disease, and causes postoperative pain which needs about 2-3 days hospital stay and a convalescence of at least one month[5,6].Stapled hemorrhoidectomy is a newer modality that represents a paradigm change in the treatment of hemorrhoids of grade 3 and grade 4[7].Due to the absence of a perianal incision and the lack of somatic nerve terminations on the rectal wall above the dentate line, Stapler hemorrhoidopexy (SH) is linked with decreased postoperative discomfort. It is linked to a shortened recovery period, a shorter hospital stay, less discomfort, and an earlier return to regular activities [8].

Aim-

To study the outcome of stapler haemrrhoidopexy versus open haemrrhoidectomy.

Objectives-

1. To compare duration of surgery.
2. To compare the postoperative complaints such as pain, bleeding, or urinary retention.
3. To compare the time of recovery period.
4. To compare the duration of hospital stay.

Material and Method-

The present study was conducted in the department of General Surgery, Sri Aurobindo Medical College and PGI, Indore, Madhya Pradesh, India over 18 month duration from September 2022 to February 2024. It was a Prospective study comparing Open versus Stapled hemorrhoidopexy for the management of Grade 3 and 4 hemorrhoids .Study was conducted on 80 patients admitted and operated for hemorrhoids at our institute who fulfilled the inclusion and exclusion criteria.Data was collected by using Proforma. The patients were categorized into two study groups (each included 40 patients): group 1 was treated by stapled hemorrhoidopexy, and group 2 had conventional hemorrhoidectomy.

Inclusion criteria-

Patients above 18 years of age group irrespective of sex with clinical Grade 3 and Grade 4 haemorrhoids undergoing surgery within the study duration.
Patients with Grade 3 and Grade 4 Hemorrhoids who are willing to

Exclusion criteria

1) Acute hemorrhoidal episodes with thrombosis
2) Prior hemorrhoidectomy
3) Inter current anal pathology (like fistula in ano and anal fissure)
4) Prolapse of single anal cushion
5) Anal stenosis

Due approval was taken from Institutional Ethical Committee before undertaking the study. The selected patients were then informed about the procedure and written informed consent was taken.

Patients were prepared for surgery after thorough clinical evaluation including history, previous history, drug history, abdominal examination, digital rectal examination and proctoscopy, in the outpatient department. Preliminary investigations for surgery and anaesthesia fitness were done, which included routine haematological investigations of complete blood count, blood group, renal function and blood glucose and serological tests for antibodies of hepatitis B surface antigen (HBSAg), hepatitis C virus (HCV) and human immunodeficiency virus (HIV), a urine routine examination, chest X ray and an electrocardiogram (ECG). A sigmoidoscopy was performed on all patients to rule out any rectal or sigmoidal pathology. The above-mentioned procedures were compared in terms of operating time, blood loss, post-operative pain (done by VAS), duration of hospital stay, postoperative complications, and time to return to work. The patients were followed up for 3 months and any complications encountered between the 2 procedures was compared.

OBSERVATION AND RESULTS-

Eighty patients were part of this study, out of which 40 patients each were studied in both the open and stapler hemorrhoidectomy group. Of 80 patients, 57 (71.25%) were males and 23 (28.7%) were females. The maximum number of patients (65%) belonged to the age group 31 to 50 years, followed by age group 11 to 30 years (25%) and age group 51 to 70 years (10%) respectively.

The operating time (p= 0.04) and hospital stay (P=0.0003) were much less in the stapler hemorrhoidectomy group as compared to the open procedure group. Also, postoperative pain (visual analogue scale)(p=0.01) was less in the stapler hemorrhoidectomy group. The stapler group had an early return to normal activities as compared to the open hemorrhoidectomy group(P=0.02) (Table 1)

TABLE 1: Clinical presentation of hemorrhoid patients

Characteristics		Total cases (N=80)	Stapler Haemorrhoidectomy (N=40)	Open Haemorrhoidectomy (N=40)	P- value
Age groups in years	18-30	18	10/40(25%)	08/40(20%)	0.5
	31-50	52	26/40(65%)	26/40(65%)	
	51-70	10	04/40(10%)	06/40(15%)	
Operating time (in minutes)			35±6	46±10	0.04
Hospital stay			1±1.5 (in days)	5±1.2 (in days)	0.0003
Post-operative pain (visual analogue scale at 24 hours post-operative)			1.92±0.23	6.19±0.41	0.01
Return to activity (Normal routine Work)			4±1.5	12±3.4	0.02

Among the studied patients, the predominant symptom was bleeding per rectum in 65% of cases followed by Something protruding out of the anal canal 50 % of cases. The least common complaint was pain in 17% of cases. Other symptoms included perianal itching and protrusion out of the anal canal (Table 2).

TABLE 2: Symptoms of hemorrhoid patients

Symptoms	N=80
Bleeding	52(65%)
Mucus discharge	30 (37.5%)
No discharge	22 (27.5%)
Perianal Itching	24 (30%)
Something protruding out of the anal canal	40 (50%)
Pain	14 (17%)

The patients were followed up for complications during postoperative period up to a period of three months. Pain was the symptom present in both the groups with 27.5% of patients complaining of pain in the open group while 10 % of patients complained of pain in the stapled hemorrhoidectomy group. In the open hemorrhoidectomy group, pain was present in 27.5% of patients in one week postoperatively, 23.3% of patients in one month follow-up and only 3.3% in three months follow-up. In stapler hemorrhoidectomy, 13.3% of patients presented with pain in one week follow-up while 10% of patients presented with pain in one month follow-up while none presented with pain in three months follow-up. Bleeding was present in 6.7% of patients in the open hemorrhoidectomy group while none reported bleeding in the stapler group. One case of incontinence was present in the open group till one week follow-up. Recurrence was present in 10% of patients in the open hemorrhoidectomy group which persisted in 7.5% of patients till three months follow-up while non presented with recurrence in the stapled hemorrhoidectomy group after three months follow-up (Table 3).

TABLE 3: Incidence of various postoperative complications in open and stapler hemorrhoidectomy group

Complications	Open Hemorrhoidectomy Group n=30				Stapler Hemorrhoidectomy Group n=30			
	Total (post-operative till 3 months follow-up)	At 1 week (n=40)	At 1 month (n=40)	At 3 months (n=40)	Total (post-operative till 3 months follow-up)	At 1 week (n=40)	At 1 month (n=40)	At 3 months (n=40)
Pain	11(27.5%)	11(27.5%)	7(17.5%)	1(2.5%)	4(10%)	4(10%)	2(5%)	0
Bleeding	2 (5%)	1 (2.5%)	1(2.5%)	0	0	0	0	0
Incontinence	1 (2.5%)	1(2.5%)	0	0	0	0	0	0
Recurrence	4 (10%)	0	1(2.5%)	3(7.5%)	0	0	0	0

DISCUSSION –

Millions of people throughout their lives suffer with hemorrhoids, a common ailment of the anorectal region that manifests as swelling and protrusion of the anal canal cushions. Constipation and prolonged standing posture have been identified as the primary causes of this medical and social issue [9]. The primary clinical characteristic of hemorrhoids is rectal bleeding, which is painless, happens during bowel movements, and is characterized by fresh blood in the toilet bowl, according to patients [10]. Mucus discharge, discomfort, and something sticking out of the rectum are further symptoms. Surgery is the preferred treatment for third and fourth degree hemorrhoids, while there are other options as well, each with advantages and disadvantages [11]. The consequences of surgical hemorrhoidal excision include anal canal stenosis, persistent discharge, partial or full incontinence, bleeding, and discomfort, which can occasionally be severe and ongoing. The open hemorrhoidectomy approach is still the most often performed surgery for the treatment of hemorrhoids, despite the development of several modern hemorrhoid treatment methods such as infrared coagulation, cryotherapy, laser hemorrhoidectomy, etc. [12]. At the 1998 World Endoscopic Congress in Rome, Antonio Longo developed the "stapled hemorrhoidectomy," which demonstrated excellent outcomes and an early recovery and return to work. The majority of surgeons worldwide have accepted this treatment, which was created especially to increase patient satisfaction and reduce postoperative pain [13]. The majority of patients were male in this present study with male to female ratio being 2.5:1. Both the procedures whether open or stapler techniques for hemorrhoids were not free of complications but in our facility the incidence of complications was found to be less in the patients operated with staplers. Pain was seen in more patients (27.5%) in the open hemorrhoidectomy group which decreased to 2.5% of patients in three months follow-up. Incidence of pain was less in the stapler group with 10% of cases at one week follow-up and no symptoms of pain at three months follow up. Recurrence was also seen in the open hemorrhoidectomy group in 10% of cases and there

where no recurence in the stapler hemorrhoidectomy group. No occurrence of incontinence was found in the stapler hemorrhoidectomy group, whereas the occurrence of minor incontinence in 2.5% of cases during one week follow-up was found in the open hemorrhoidectomy group. The average operation time in the present study was less in stapler hemorrhoidectomy (35+6min) patients as compared to the open group(46+10). Almost all the studies done by various researchers from the past till present show similar results where the time taken for stapler hemorrhoidectomy is quite less [14-16]. Postoperative stay in the hospital was more in the open hemorrhoidectomy group as the wound becomes exposed with a larger raw area and required observation for any bleeding and also pain present due to the exposed sensitive anoderm area. Even patients returned to normal activity within four days of surgery in stapled hemorrhoidectomy group in the present study while returning to normal activity required almost two weeks in the open hemorrhoidectomy group. The postoperative hospital stay and return to normal routine work are also in agreement with studies done by other researchers (Table 4). So it was noticed that in the open hemorrhoidectomy group patients needed more time during surgery, more hospital stay and more time to return to normal activities.

TABLE 4: Average operative time, hospital stay and return to normal activity time in the stapler and open haemorrhoidectomy group done by various researchers.

Various studies	Operative time (mins)		Hospital stay (days)		Return to normal routine activity (days)	
	Stapler Haemorr-hoidectomy	Open Haemorr-hoidectomy	Stapler Haemorr-hoidectomy	Open Haemorr-hoidectomy	Stapler Haemorr-hoidectomy	Open Haemorr-hoidectomy
Present Study	35±6	46±10	1±1.5	5±1.2	4±1.5	12±3.4
Sachin and Muruganathan (2017) [14]	33	44	2	4	8	15
Singh et al. (2018) [17]	<30	<40	1	3	2-7	7-13
Malyadri and Allu (2021) [15]	48 (38-40)	50 (48-51)	1	3	3	5
Surati et al. (2022) [16]	34 (20-50)	40 (20-60)	1.5	2.4	3 (2-8)	20.5 (6-46)
Kumar et al. (2023) [18]	24±6.2	46±10	1±1.2	4+1.2	4±1.2	14±3.4

CONCLUSION-

Sometimes hemorrhoids can be problematic, causing propalse and sporadic bleeding, which can worry the patient. Hemorrhoids can be treated with a range of surgical techniques. We have concluded that stapled hemorrhoidectomy has good patient compliance, less complications and better outcome. It may be a good choice for treating hemorrhoids of the third and fourth grades. Additional clinical trials are also required to validate our study's findings. In order to prevent a recurrence, it is also essential that patients receive dietary and lifestyle adjustments in addition to surgical care. It is advised to conduct additional research with a larger patient population and a longer follow-up duration in order to provide more positive findings.

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