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THE PROMISING OUTCOMES OF STAPLED HEMORRHOIDOPEXY IN CONTRAST TO OPEN HAEMORRHOIDECTOMY

General Surgery

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ABSTRACT

Background Haemorrhoids, often referred to as "Piles," impact around 4.4% of the population, leading to surgical intervention being a frequent treatment method. In surgical practice, various nonsurgical and surgical options are available for managing this condition. While the Milligan-Morgan open haemorrhoidectomy is widely utilized, there's a growing recognition worldwide of a newer technique known as "Stapled Hemorrhoidopexy," pioneered by Italian surgeon Antonio Longo, attributed to its perceived benefits. **Methods** A prospective comparative study was conducted from July to December 2023. The study comprised 50 patients aged between 25 and 65 years diagnosed with grade III or IV haemorrhoids. They were divided into two groups: Group 1 underwent Open haemorrhoidectomy (25 patients), and Group 2 underwent Stapled Hemorrhoidopexy (25 patients). Following surgery, patients from both groups were assessed at discharge. Each patient was provided with a questionnaire, and data were collected verbally and analysed statistically. Comparative analysis between the two groups was performed using the student's t-test. **Results** In the Open Haemorrhoidectomy group, males comprised 72% and 80% of the Stapled Hemorrhoidopexy group, while females accounted for 28% and 20%, respectively. Post-operative bleeding occurred in 4% of both groups. Urinary retention post-operatively was observed in 8% and 12% of patients in the Open Haemorrhoidectomy and Stapled Hemorrhoidopexy groups, respectively. As per the results of the Sample t-test, postoperative pain, length of hospital stays, and time taken to resume daily activities were notably reduced in the Stapled Hemorrhoidopexy group, and these differences were statistically significant. Nevertheless, the occurrence of complications like post-operative bleeding and urinary retention was comparable in both groups. **Conclusion** Stapled Hemorrhoidopexy is associated with reduced pain, shorter hospital stays, and quicker return to daily activities compared to open haemorrhoidectomy. Nonetheless, long-term monitoring is necessary to determine the recurrence rate following stapled haemorrhoidectomy.

KEYWORDS

Haemorrhoid, Haemorrhoidectomy, Hemorrhoidopexy

INTRODUCTION

Haemorrhoids, also known as piles, are a prevalent condition affecting the anal region. They involve swollen veins in the anal canal and are often associated with factors like obesity, constipation, and pregnancy. Conventionally, they manifest at the 3, 7, 1, and 11 o'clock positions.(1) Symptoms typically include rectal bleeding and protrusion. Bleeding is typically painless and appears as bright red. Haemorrhoids can be categorized into four groups based on their severity. The treatment approach for haemorrhoids varies depending on their severity. For first and second-degree haemorrhoids, options include injection sclerotherapy and banding. Third and fourth-degree haemorrhoids typically require haemorrhoidectomy. The Milligan-Morgan open haemorrhoidectomy is a commonly used surgical technique for managing these advanced cases and is often regarded as the standard procedure.(2) However, it's worth noting that complications such as anal pain, acute urinary retention, anal stenosis, and incontinence can occur during both the early and late stages of the post-operative period. Circular stapled Hemorrhoidopexy was initially introduced by Longo in 1998 as a substitute for conventional excisional haemorrhoidectomy.(3) Several randomized controlled trials have explored the comparison between stapled Hemorrhoidopexy and traditional excisional haemorrhoidectomy. These studies indicate that stapled Hemorrhoidopexy is often less painful and leads to faster recovery times. This article seeks to examine the existing literature concerning stapled Hemorrhoidopexy and propose a management strategy based on recent evidence. It aims to compare two techniques, open haemorrhoidectomy and stapled Hemorrhoidopexy, with regards to post-operative pain, return to normal daily activities, length of hospital stays after surgery, post-operative bleeding and urinary retention.

MATERIALS AND METHODS

This is a prospective, comparative study conducted at Darbhanga medical college and hospital, laheriasarai, Darbhanga. The study spanned 6 months, from July to December 2023. A total of 50 patients aged between 25 and 65 years, diagnosed with Grade III or IV Haemorrhoids through Proctoscopy and treated in the Surgical Department, were enrolled in the study. Patients were divided into two groups: those assigned odd numbers underwent Open haemorr hoidectomy, while those assigned even numbers underwent Stapled Hemorrhoidopexy.

Group 1: Patients undergoing open haemorrhoidectomy.
Group 2: Patients undergoing stapled Hemorrhoidopexy.

Patients with concurrent conditions such as anal fissure, fistula-in-Ano, perianal abscess, prior surgical interventions resulting in recurrence, haemorrhoids in cirrhotic individuals, bleeding disorders, thrombosis of external haemorrhoids, or perianal hematoma were not considered for inclusion. Evaluation of potential participants presenting with symptoms indicative of haemorrhoids at the outpatient department involved: 1. Comprehensive collection of medical history. 2. Systemic assessments. 3. Local examination (Digital rectal examination/proctoscopy). Following explanation of the diagnosis to both the patient and their attendants, consent for surgery was obtained. Pre-anaesthetic assessment and necessary investigations were performed, including complete blood counts, blood grouping, random blood sugar, serum creatinine, chest X-ray, bleeding time and clotting time, as well as Anti -HCV, Anti-HIV and HBsAG tests. After completing the investigations and pre-anaesthetic evaluation, patients were scheduled for either Open haemorrhoidectomy or Stapled Hemorrhoidopexy. All patients received a proctoclysis enema before and on the morning of the surgery. A total of 25 patients underwent Open haemorrhoidectomy, while another 25 patients underwent Stapled Hemorrhoidopexy. Stapled Hemorrhoidopexy was performed utilizing specific instruments including a circular anal dilator, purse string suture anoscope, suture threader, and haemorrhoidal circular stapler. Post-operative pain management involved administering Intravenous Paracetamol every 12 hours on the first day following surgery, followed by oral NSAIDs in the form of Diclofenac 50mg every 8 hours for the subsequent 3 post-operative days for both groups. Additional analgesia was provided upon patient request. Urinary retention was defined as the inability to urinate for a period of 12 hours or longer after the operation. Data were collected from patients via a

questionnaire or verbal responses and were analysed statistically. Descriptive statistics, including mean, standard deviation, and percentage, were computed. Comparative analysis between the two groups were done based on independent student's 't' test using SPSS software.

Surgical Technique

Stapled Hemorrhoidopexy:

The circular anal dilator was carefully inserted and positioned within the anus, effectively reducing the prolapse of the anoderm and portions of the anal mucous membrane. Subsequently, the circular anal dilator was secured to the perianal skin using 1-0 silk sutures. The obturator of the dilator was then removed and replaced with the purse string anoscope. The 90-degree window within the anoscope was maneuverer through the anus to facilitate the application of a 2-0 Prolene (polypropylene, Ethicon, Inc.) purse string suture. The circular purse string was positioned approximately 3 to 5 centimetres above the dentate line. Starting at the 3 o'clock position and progressing in a clockwise direction, the purse string encompassed only the mucosa and submucosa. Approximately three bites were taken in each quadrant of the anal canal. Additionally, a second 2-0 polypropylene simple stitch was placed perpendicular and contralaterally at the 9 o'clock position. special attention was given to women to ensure that the posterior vaginal wall was not inadvertently included in the purse string. The hemorrhoidal stapler was opened fully, and its head was gently introduced and positioned just proximal to the purse string, where it was securely fastened. This approach ensured that traction sutures were passed through the stapling device in a balanced manner, allowing for a more even distribution of tissue into the stapler's drum. The stapler was held closed for 30 seconds before and 2 minutes after firing. Following the removal of the stapling device, the purse string anoscope was reinserted to inspect the stapled line for uniformity and to check for any signs of bleeding or tears. Bleeding, if encountered, was managed by carefully suturing the bleeding points using 2-0 silk sutures. The stapler was then opened, and the completeness of the excised tissue ring (doughnut) was verified. No anal packing was inserted into the canal. External dressing was applied as needed. The operating time was defined as the duration from the start of the surgery until the application of the dressing.

Open Haemorrhoidectomy

For the second group, Milligan Morgan open haemorrhoidectomy was performed. Both external and internal haemorrhoids were completely excised up to the anorectal ring using scissors. The pedicles were doubly ligated with No. 2 chromic catgut sutures. Diathermy was utilized to ensure haemostasis, and the wounds were left open to allow for granulation. No packs were inserted into the anal canal at the conclusion of the procedure. Following surgery, all patients resumed a regular diet and were prescribed oral lactulose 15 ml twice daily to prevent the formation of hard stools. Patients in both groups received identical instructions for cleansing the anal area and were advised to take HOT Sitz baths. Additionally, they received the same type of external dressing.

RESULTS

Out of the total 50 patients, 86.6% were males and 13.4% were females in the OH group, while 90% were males and 10% were females in the SH group (Table 1). The number of patients with Grade III haemorrhoids was 38 in the OH group and 35 in the SH group (Table 3). The mean age of patients in the OH group was 42.2 years, whereas for the SH group, it was 38.5 years. Table 4 presents the statistics regarding age, post-operative pain Visual Analog Score (VAS), resumption of daily activity, and post-operative hospital stay for both OH and SH groups. Post-operative bleeding occurred in 2% of patients in both the OH and SH groups, with one patient out of 40 in each group experiencing this complication (Table 5). Post-operative urinary retention was observed in 4% of patients in the OH group and 8% in the SH group (Table 2). None of the patients experienced post-operative anal incontinence (Table 4). Table 5 provides a comparison of post-operative complications between the OH and SH groups.

Table 1. Sex Distribution Among the Two Group

	OPEN HEMORRHOIDECTOMY		STAPLED HEMORRHOIDOPEXY	
	Frequency	Percentage	Frequency	Percentage
MALE	18	72	20	80
FEMALE	7	28	5	20
TOTAL	25	100	25	100

Table 2. Post-operative Urinary Retention

	OPEN HEMORRHOIDECTOMY		STAPLED HEMORRHOIDOPEXY	
	Frequency	Percentage	Frequency	Percentage
PRESENT	2	8	3	12
NIL	23	92	22	88
TOTAL	25	100	25	100

Table 3. Number Of the Patients Having Grade 3 And 4 Haemorrhoids

	OPEN HEMORRHOIDECTOMY		STAPLED HEMORRHOIDOPEXY	
	Frequency	Percentage	Frequency	Percentage
GRADE 3	20	80	21	84
GRADE 4	5	20	4	16
TOTAL	25	100	25	100

Table 4. Postoperative Bleeding

	OPEN HEMORRHOIDECTOMY		STAPLED HEMORRHOIDOPEXY	
	Frequency	Percentage	Frequency	Percentage
PRESENT	1	4	1	4
NIL	24	96	24	96
TOTAL	25	100	25	100

Table 4. Comparative analysis of two groups

PARAMETERS	PROCEDURE NAME	MEAN	STANDARD DEVIATION	P VALUE
Post op pain visual analog scale	OPEN HEMORRHOIDECTOMY	4.32	0.870	0.0002
	STAPLED HEMORRHOIDOPEXY	3.44	0.687	
Resumption of daily activity	OPEN HEMORRHOIDECTOMY	5.44	0.885	0.0040
	STAPLED HEMORRHOIDOPEXY	4.64	1.003	
Post op hospital stay	OPEN HEMORRHOIDECTOMY	3.52	0.621	0.0027
	STAPLED HEMORRHOIDOPEXY	2.96	0.654	

DISCUSSION

Haemorrhoids, a prevalent ailment in the anorectal area, manifest as swelling and protrusion of the anal cushion tissues, impacting a significant portion of the population throughout their lives. Extended periods of standing and constipation are identified as primary factors contributing to this health issue with both medical and socioeconomic ramifications.(4) Stapled Hemorrhoidopexy represents a modern approach to managing haemorrhoidal disease.(3) Despite concerns surrounding its safety and efficacy, it has emerged as a valuable treatment option for managing haemorrhoid. Extensive research has explored its indications, constraints, and potential complications. (5). Multiple randomized trials were carried out to assess the feasibility and effectiveness of stapler Hemorrhoidopexy compared to conventional haemorrhoidectomy.(6) Postoperative pain serves as a crucial factor in assessing the effectiveness of any surgical procedure. As per Ashish Agrawal et al., individuals in the stapled Hemorrhoidopexy group experienced a post-operative VAS (Visual Analog Scale) score below 4 within 48 hours after surgery, and there were no recurring symptoms during follow-up assessments.(7) In our study, postoperative pain, as measured by the Visual Analog Scale, was observed to be 3.44, indicating lower scores for patients undergoing stapler haemorrhoidectomy compared to those undergoing open haemorrhoidectomy. This reduction in pain is attributed to the procedure being performed above the dentate line, where there are fewer nerve endings responsible for transmitting pain signals. Resuming daily activities promptly after surgery holds significant importance for patients' recovery. As reported by SS Jaiswal et al., they

evaluated the resumption of daily activities using the Katz Index of Independence in Activities of Daily Living score and observed that by the fourth day following stapled Hemorrhoidopexy, all their patients had attained the highest score of 6.(8) In our study, patients undergoing stapled haemorrhoidectomy were observed to resume their routine activities approximately 0.8 days earlier compared to those undergoing open haemorrhoidectomy. This difference was found to be statistically significant, with a p-value of 0.004 and a 95% confidence interval. According to Ali Athar et al., after undergoing stapled Hemorrhoidopexy, the average length of hospital stay was 1.4 days (ranging from 0 to 5 days).(9) In our study, there was a statistically significant difference in postoperative hospital stay, with a reduction of 0.56 in score for the stapled group compared to the open group ($p < 0.0027$, 95% confidence interval). The mean duration of hospital stay was significantly shorter for the stapled haemorrhoidectomy group (3.52 days) compared to the open haemorrhoidectomy group (2.96 days) with a p-value of 0.0027. This expedited recovery can be attributed to reduced postoperative discomfort and earlier discharge from the hospital. In a study conducted by Palimento D et al. it was found that 21.6% of patients in the stapled group and 13.6% in the open group experienced post-operative bleeding.(10) In our study, similar findings were observed, with bleeding occurring in 4% of cases in both groups. In our study, postoperative urinary retention occurred in 8% of patients undergoing stapled haemorrhoidectomy, while it was observed in 12% of patients undergoing open haemorrhoidectomy.

CONCLUSION

Stapled Hemorrhoidopexy offers safety along with various short-term advantages surpassing Milligan-Morgan haemorrhoidectomy such as reduced post-operative pain, quicker discharge from the hospital, and faster resumption of normal activities. Therefore, this study was conducted to evaluate and compare these parameters between two groups, each consisting of 25 patients, randomly assigned to either the stapled Hemorrhoidopexy or open haemorrhoidectomy procedures. Nevertheless, advocating stapled haemorrhoidectomy as the preferred procedure for all patients poses challenges due to economic constraints. However, for individuals who have the financial means, this procedure provides advantages such as shorter operating time, reduced postoperative pain after the initial day, and earlier resumption of normal activities, without an increase in complications. Nonetheless, long-term follow-up to monitor recurrence is imperative. Early functional and symptomatic outcomes have been promising and seem comparable to those achieved through traditional techniques.

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