



A STUDY TO COMPARE STAPLER HAEMORRHOIDECTOMY VS CONVENTIONAL HAEMORRHOIDECTOMY

General Surgery

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ABSTRACT

Introduction: Until recently, Milligan-Morgan hemorrhoidectomy, known as conventional or open hemorrhoidectomy, was the predominant surgical treatment for hemorrhoids. However, with the emergence of minimally invasive techniques, the landscape has shifted. In recent years, stapled hemorrhoidectomy has gained popularity as a day surgery option due to reduced post-operative pain and quicker return to normal activities. This study aims to compare stapled hemorrhoidectomy with conventional hemorrhoidectomy in the surgical management of hemorrhoids. **Material & Methods:** A hospital based non-randomised comparative study was conducted in Dept. of Surgery of a tertiary care hospital. A total of 120 eligible cases scheduled for haemorrhoidectomy in our hospital were included in the study. These 120 patients were then divided into two groups i.e. 60 for stapled procedure and other 60 patients for conventional procedure. Data were analysed using statistical software SPSS ver. 26. **Results:** Mean operative time was significantly less in stapler group (38.7 vs 48.02 mins; $p < 0.0001$) while mean hospital stay was significantly longer in conventional surgery group (6.17 vs 2.20 days; $p < 0.0001$). Post-op complains of pain, immediately after surgery (6 hrs.) and at day 1 and day 3 was significantly less in stapler group ($p < 0.0001$). Post-op complications after conventional surgery include bleeding (30%), urinary retention (10%), wound infection, anal incontinence (10% each) and anal stenosis (7%). Complications of stapler surgery include bleeding (15%) and urinary retention (7%). Mean time for return to work was significantly less in stapler group as compared to conventional surgery group (4.73 vs 13.58 days; $p < 0.0001$). **Conclusion:** Stapler haemorrhoidectomy offers advantages such as reduced operative time, shorter hospital stays, decreased post-operative pain, and quicker return to normal activity. Therefore, it is recommended for all patients undergoing haemorrhoid surgery. However, larger prospective double-blind trials with longer follow-up periods are necessary to evaluate recurrence rates and assess cost-effectiveness. These studies are crucial for gaining a comprehensive understanding of stapler haemorrhoidectomy's efficacy and economic impact compared to other treatment options.

KEYWORDS

Conventional haemorrhoidectomy, Haemorrhoids, Stapler haemorrhoidectomy, post-operative pain, Return to work.

INTRODUCTION:

One of the most prevalent illnesses among individuals is HAEMORRHOIDS, and medical literature has addressed their treatment since Egyptian papyruses from before 3000 BC. In 400BC, Hippocrates described techniques for treating them that included burning, strangling, and excision [Ellesmore et al. 2009].

The Greek word haemorrhoids, which means bleeding (haima = blood, rhoos = flowing), is where the term "haemorrhoid" comes, reflecting the condition's common symptom.

The swelling surrounding the anus is referred to as "piles" in Latin, which comes from the word pila, which means a ball. These phrases are frequently used synonymously.

In 83 BC, the renowned Latin poet Martial described haemorrhoids in a poem, noting their prevalence among both the rich and the poor, the young and the old: "In wife, fig; in husband, figs; nor governor nor peasant can escape this disease; neither rich nor poor; it affects the youth equally with the aged."

This observation remains true today, highlighting the widespread nature of haemorrhoids across different demographics. Although exact incidence rates are difficult to ascertain, surgery rates for HAEMORRHOIDS vary greatly between countries, ranging from 35 per 100,000 people annually in the UK to 50–60 per 100,000 people annually in the US. In the US population, the prevalence is about 4.4% [Johanson JF, sonneberg et al. 1991]. Over time, a number of substitute remedies for HAEMORRHOIDS have been created.

The most popular surgical method for HAEMORRHOIDS is still the Milligan-Morgan haemorrhoidectomy, sometimes referred to as conventional or open haemorrhoidectomy. It was initially published in 1937. Although successful, there are drawbacks such as severe pain, extended hospital stays, and possible consequences include haemorrhage right away, urine retention, and complications down the road like stenosis and incontinence [Morgagni JB et al. 1975].

The treatment of HAEMORRHOIDS has seen a significant change since the introduction of minimally invasive surgery. "In 1998, Dr. Antonio Longo developed the circular stapler haemorrhoidectomy, sometimes known as stapled haemorrhoidectomy or the Procedure for

Prolapse and Haemorrhoids (PPH)" [Longo A et al. 1998]. With less pain following surgery and a quicker return to regular activities, this approach has become a popular choice for day surgeries.

Its steep learning curve, specialized training requirements, and expensive instrumentation prevent it from being widely used, despite its early promising results. The purpose of this study is to compare the surgical therapy of HAEMORRHOIDS between stapled and standard haemorrhoidectomy.

Aims And Objectives:

- To compare stapler hemorrhoidopexy vs conventional excisional techniques in the surgical treatment of HAEMORRHOIDS.
- To compare stapler haemorrhoidectomy with conventional haemorrhoidectomy in term of:
 - a) Operative time
 - b) Post-operative pain
 - c) Bleeding
 - d) Duration of hospital stay
 - e) Anal incontinence/ Stenosis
 - f) Other post-op complication

MATERIALS AND METHODS:

All eligible cases undergoing conventional haemorrhoidectomy and stapled haemorrhoidectomy in Department of surgery, Dhiraj General Hospital, Pipariya, Vadodara during December 2023 to June 2024.

Inclusion Criteria:

1. Male or Female patient age between 16-65 years
2. A new diagnosis of internal or complex haemorrhoid by expert surgeons, having stage 3 or 4 haemorrhoids
3. No response to conservative management
4. Patient signed informed consent to participate in study

Exclusion Criteria:

1. Patient having thrombosed haemorrhoids
2. Patient having addiction history, psychiatric history
3. Previous history of anorectal surgeries
4. Having anal fissure of fistula
5. History of gastrointestinal disease
6. Disturbed coagulation test
7. Patient's will to exit the study

Sample size for conventional and stapler haemorrhoidectomy was 60 each (total 120).

Following surgery, the study group was examined for variables like:

1. Post-operative pain: measured using a visual analog scale
2. gushing blood
3. infections in wounds
4. urinary retention
5. Anal incontinence
6. Anal stenosis

Every patient was evaluated on the first postoperative day, the day of discharge, and at the one- week and three-week follow-up appointments following surgery.

RESULTS:

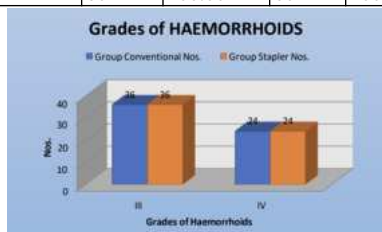
1. Comparison of Complaints Between Group 1 and Group 2

Complaints	Group Conventional		Group Stapler		P-value
	Nos.	%	Nos.	%	
Bleeding	51	85.00	47	78.33	P = 0.5532
Pain	10	16.67	19	31.67	P = 0.6691
Constipation	28	46.67	28	46.67	P = 0.7888
Prolapse	44	73.33	40	66.67	P = 0.6690



2. Grades of Haemorrhoids Across Study Groups

Grades of HAEMORRHOIDS	Group Conventional		Group Stapler		Total
	Nos.	%	Nos.	%	
III	36	60.00	36	60.00	72
IV	24	40.00	24	40.00	48
Total	60	100.00	60	100.00	120



Group 1 (conventional haemorrhoidectomy) had 36% of study participants with grade 3 and 24.0% with grade 4. Group 2 (stapler haemorrhoidectomy) had 36% of study participants with grade 3 and 24.0% with grade 4.

The chi-square value for the distribution of grades of haemorrhoids between the two groups was 0.0347. The corresponding p-value of 0.8522 indicates that grades of haemorrhoids distribution between the two groups is not statistically significant.

3. Comparison of conventional /staple haemorrhoidectomy operative Time

	Group Conventional		Group Stapler		P-value
	Mean	SD	Mean	SD	
Operative Time (mins)	48.02	2.30	38.72	1.94	P < 0.0001



The mean time for conventional haemorrhoidectomy was 48.02 minutes (SD 2.30) in Group 1 (conventional haemorrhoidectomy) and 38.72 minutes (SD 1.94) in Group 2 (stapler haemorrhoidectomy) with a mean difference of 9.30 seconds, with a t-value of -23.941 and a p-value <0.0001, indicating a statistically significant difference in intervention time between the two groups.

4. Hospital stay

	Group Conventional		Group Stapler		P-value
	Mean	SD	Mean	SD	
Hospital stay (in day)	6.17	1.06	2.20	0.48	P < 0.0001

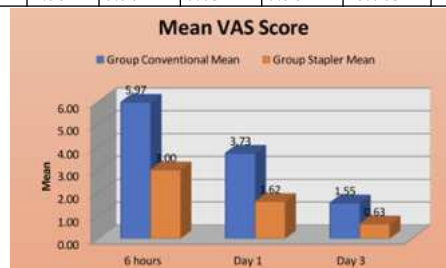


The mean hospital stay was 6.17 days (SD 1.06) for Group 1 (conventional haemorrhoidectomy) and 2.20 days (SD 0.48) for Group 2 (stapler haemorrhoidectomy).

The mean difference was 3.97days, with a t-value of -26.428 and a p-value of 0.0001, indicating a statistically significant difference in hospital stay duration between the groups. This suggests that the hospital stay duration is significantly shorter in Group 2 compared to Group 1.

5. Comparison of VAS score Between Group 1 and Group 2

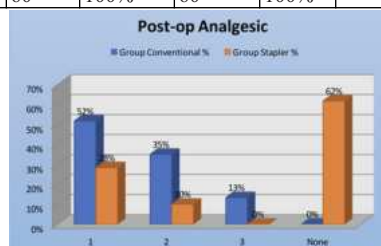
VAS Score	Group Conventional		Group Stapler		t	P-value
	Mean	SD	Mean	SD		
6 hours	5.97	0.80	3.00	0.71	-21.508	P<0.0001
Day 1	3.73	0.71	1.62	0.64	-17.098	P<0.0001
Day 3	1.55	0.57	0.63	0.58	-8.763	P<0.0001



The study found that group 2, which is the stapler group, had considerably fewer post-op complaints of pain (as measured by the VAS score) at day 1 and day 3, as well as immediately after surgery (6 hours), compared to group 1 (the conventional group) (p value <0.0001).

6. Post Op Analgesia

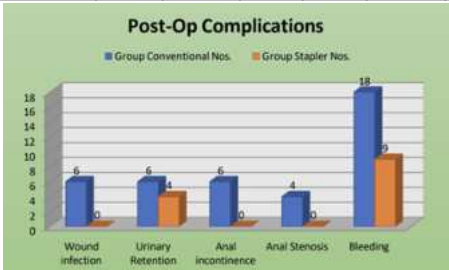
Post-op Analgesic	Group Conventional		Group Stapler		P-value	Chi square
	Nos.	%	Nos.	%		
1	31	52%	17	28%	P < 0.0001	57.417
2	21	35%	6	10%		
3	8	13%	0	0%		
None	0	0%	37	62%		
Total	60	100%	60	100%		



Post operative analgesic in group 2 patient(stapler haemorrhoidectomy) 62% patients do not require any analgesic , while comparing with group 1 (conventional haemorrhoidectomy) had zero patients which do not require analgesic. One dose of analgesic in group 1 is 52% while in group 2 is 28%. >1 dose of analgia required in group 1 patient 48% while only 10% in group 2 patient. So the p value<0.0001.

7. Post Operative Complications

Post-op Complications	Group Conventional		Group Stapler		P-value	Chi-square
	Nos.	%	Nos.	%		
Wound infection	6	10%	0	0%	N.A.	N.A.
Urinary Retention	6	10%	4	7%	P = 0.3295	0.951
Anal incontinence	6	10%	0	0%	N.A.	N.A.
Anal Stenosis	4	7%	0	0%	N.A.	N.A.
Bleeding	18	30%	9	15%	P = 0.7061	0.142



CONCLUSION:

Our research demonstrates that, in comparison to stapler haemorrhoidectomy, traditional haemorrhoidectomy is linked to increased post-operative pain, lengthier surgery and hospital stays, and a delayed return to work.

- Although stapled haemorrhoidectomy results in less pain and quicker recovery, it requires specialized skills and is more costly. Therefore, it may not be suitable for all patients.
- Surgeons should use their expertise to choose the most appropriate treatment for each patient, considering factors such as cost, patient circumstances, and treatment efficacy.
- Stapler haemorrhoidectomy is a safe procedure with several short-term benefits and serves as a viable alternative to conventional methods.
- To evaluate the cost-effectiveness of the stapler haemorrhoidectomy technique and recurrence rates, more extensive double-blind trials with longer follow-up periods are required.

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