#### Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2023; 15(6); 2356-2363

**Original Research Article** 

## Excisional Hemorroidectomy Versus Minimal Invasive Processure for Hemorrhoids (Miph or Stapler Hemorroidopexy): A Comparative Study

## Nilesh. P. Suthar<sup>1</sup>, Amit. H. Desai<sup>2</sup>

# <sup>1</sup>Assistant Professor, Department of General Surgery, Nootan Medical College and Research Center, Visnagar <sup>2</sup>Assistant Professor, Department of General Surgery, Nootan Medical College and

#### **Research Center**, Visnagar

Received: 24-04-2023 / Revised: 27-05-2023 / Accepted: 30-06-2023 Corresponding author: Amit.H.Desai Conflict of interest: Nil

#### Abstract:

**Introduction:** Hemorrhoids are one of the most common anorectal disorders which affects almost 25-30% population. Hemorroids are very common in day to day practice. Many surgical and non-surgical treatment modalities are available for management of hemorrhoids. Out of which hemorroidectomy is regarded as the cure of disease. It can be performed in many ways. So it is necessary to find out the convenient treatment which is minimally invasive and less painful. Coventional open method is widely accepted by many surgeons. MIPH is a recent advance in the management of hemorrhoids.

**Objective:** To compare the efficacy and safety of the two most popular conventional method of treatment of hemorrhoids: Stapler hemorroidectomy and Excisional hemorroidectomy.

**Material and Method:** Study will be done on 50 patients of 3<sup>rd</sup> and 4<sup>th</sup> degree hemorrhoids having symptoms of bleeding per rectum or prolapsed; Coming to Nootan General Hospital will be randomly classified in to two

Groups: First group managed by stapler hemorroidectomy and second group managed by Excisional hemorroidectomy (25 patients in each group) after taking informed consent.(Group of patients will be randomly classified by computer generated random method). Study aimed at comparing the

duration of surgery, post-operative pain, analgesia requirement, duration of hospital stay, post-operative complications and the amount of days taken for return to work.

**Result:** Mean duration of surgery was 27.5 minutes in MIPH group and 51.5 minutes in open hemorroidectomy group. Compare to open hemorroidectomy group patients undergoing MIPH had lesser VAS pain score on postoperative days and require lesser analgesics. No patients in the MIPH group had residual prolapse. Time require to return to work was 5.5 days in MIPH group and 23.9 days in open hemorroidectomy group.

**Conclusion**: MIPH is effective in terms of decreased per- and postoperative blood loss, minimal pain, less requirement of analgesics and less pain at first bowel movement, faster wound healing with faster postoperative recovery and short postoperative hospital stay with early return to normal routine activity but MIPH is expensive as compared to open technique. However, long-term follow-ups necessary to determine whether these initial results are lasting. **Key words**: MIPH (Stapler hemorroidectomy), Excisional hemorroidectomy.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0) and the Budapest Open Access Initiative (http://www.budapestopenaccessinitiative.org/read), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

#### Introduction

Suthar *et al*.

#### International Journal of Pharmaceutical and Clinical Research

Hemorrhoids are one of the most common anorectal disorders which affects almost 25-30% population. Hemorroids are very common in day to day practice. It is interchangeably known as Piles, but etymologically the words have different meanings.

The term'haemorrhoid' is derived from the Greek adjective hemorrhoids meaning bleeding (haima=blood, rhoos=flowing). . On the other hand the term 'pile' is derived from the Latin word pila, meaning a Ball, which aptly can be used for all forms of hemorrhoids. It commonly Presents as mass protruding per rectum and fresh bleeding per rectum. They may be primarily due to natural consequences heredity. adaptation of erect posture by mankind, straining to expel constipated stool or secondarily due to carcinoma of rectum, pregnancy, uterine tumour, and chronic constipation, dysuria due to stricture or enlarged prostate and portal Hypertension.

Hemorrhoids can be classified in many ways. Primarily they are divided into internal, external, and mixed types. Internal hemorrhoids are situated above the dentate line, covered with mucous membrane and external hemorrhoids lie below the dentate line, covered by skin. Another classification tells us the grading of the hemorrhoids ranging from grade I, being only symptomatic bleeding; grade II with spontaneous reduction of prolapsed hemorrhoids mass; grade III requiring manual repositioning of prolapsed hemorrhoids up to grade iv which are completely prolapsed hemorrhoids.

Grade I and early grade II hemorrhoids can be treated conservatively with laxative, dietary precautions, whereas grades III and IV require surgical interventions to treat the condition. Some grade II and III hemorrhoids can also be treated by Injection Sclerotherapy, banding or Infrared/laser coagulation. The third type of classification determines hemorrhoids by their anatomical position, where 3, 7 and 1 o'clock are considered to be primary and the areas between to be Secondary.

There are various surgical methods available such as Ferguson's closed hemorroidectomy, Open Milligan-Morgan hemorroidectomy and Longo's Stapled Hemorroidopexy MIPH. or Open hemorroidectomy has long been regarded by the patients as an inherently painful Reduction procedure. of pain after hemorroidectomy is an important goal, with the ultimate aim of reduction in the length of hospital stay and the possibility of day surgery. Hemorrhoidectomy care bv conventional technique causes considerable post-operative pain.

MIPH (Minimal Invasive Procedure for Hemorrhoids) is a new concept which is used to overcome these problems. Stapled hemorroidopexy for prolapsing hemorrhoids is conceptually different from Excisional hemorroidectomy. It does not accompany the pain that usually occurs after resection of the sensitive anoderm. Both procedures are effective in treating grade 3 and 4 hemorrhoids, however they both present with pros and cons as to which is the better Procedure under which circumstance.

## Aims and Objective

To compare the duration of surgery, postoperative pain and analgesia, duration of hospital stay, post- operative complications and the amount of days taken for return to Work amongst patients undergoing MIPH and Open Hemorroidectomy.

## Materials and methods

Study Design: Prospective comparative study

**Settings:** Department of surgery, Nootan general hospital, Visnagar, dist. mahesans, Gujarat

**Study duration:**  $1^{st}$  July 2022 to  $31^{st}$  December 2022.

Sample size: 50.out of 50 patients 25 patient underwent Longo technique of

MIPH and 25 patients underwent Milligan Morgan technique of open hemorroidectomy.

#### **Inclusion criteria:**

- Age: Between 20 to 70 years of age
- Sex: Both sex
- Patients of 3<sup>rd</sup> and 4<sup>th</sup> degree hemorrhoids.

**Exclusion criteria:** Patients with concomitant anal diseases like fissure in ano, Abscess, Perianal fistula and anorectal malignancy. Those patients who are not willing to give consent.

Study was approved by institutional ethical committee and is in line with the declaration of Helsinki and followed the guidelines laid out by Indian council of medical research. Written informed consent was taken from patients. Patient's hospital stay for analysis was calculated starting from the day of surgery. Pre-operatively patients were kept nil by mouth overnight and received a phosphate enema in the previous night of surgery. One dose of ceftrioxone 1gm and Metronidazole were given at the time of anesthesia for surgery.

All operations were performed in the lithotomy position under spinal anesthesia.

Pain was assessed using VAS Score. Follow-up was done at 1<sup>st</sup>, 2nd and 3<sup>rd</sup> weeks and between 4-6 weeks postoperatively. Operative times measure in minutes in the both the types of surgery. Immediate and short term post-operative pain assessed for first week. Postoperative bleeding measured as no, mild or profuse. Control of other symptoms like prolapse, pain, pruritus, anal incontinence to flatus and stool, anal stenosis will be assessed with patient's happiness.

Data of operative time, short term and long term postoperative pain, postoperative complication, postoperative symptoms free life with happiness will be collected and analyzed.

Results: A study has been undertaken to compare the results of two different surgical procedures for the treatment of 3rddegree & 4th degree Hemorrhoids i.e. open hemorroidectomy and MIPH (Stapled Hemorroidectomy). 50 cases of each were taken for this study with Careful follow up of these patients. In the present study, more patients belong to 41-50 years group, with mean age of patients was 46.3 years in miph group and 47.1 vears in open hemorroidectomy group. (Table-1)

Age in	MIPH		<b>Open Hemor</b>	Total		
years	No	%	No	%	No	%
21-30	2	8%	2	8%	4	8%
31-40	6	24%	4	16%	10	20%
41-50	8	32%	9	36%	17	34%
51-60	6	24%	8	32%	14	28%
61-70	3	12%	2	8%	5	10%
Total	25	100%	25	100%	50	100%

 Table 1: Comparison of Age Distribution of Patients Studied

Majority of patients were Mae in our study (80% male in MIPH group and 72% male in open hemorroidectomy group) (Table-2)

Gender	MIPH		Open hemor	Open hemorroidectomy		Total	
	No	%	No	%	No	%	
Male	20	80%	18	72%	38	76%	
Female	5	20%	7	28%	12	24%	
Total	25	100%	25	100%	50	100%	

 Table 2: Comparison of Gender Distribution of Patients Studied

On comparing socioeconomic status, majority of patients in MIPH group belongs to upper (60%) and middle (36%) socioeconomic class, whereas in open hemorroidectomy group majority of patients belongs to lower (76%) socioeconomic class. (Table-3)

Tuble 5. Comparison of Socioconomic Status of Latents Statica								
Socio economic	MIPH		Open hemo	orroidectomy	Total			
status	No	%	No	%	No	%		
Lower	1	4%	19	76%	20	40%		
Middle	9	36%	6	24%	15	30%		
Upper	15	60%	0	0%	15	30%		
Total	25	100%	25	100%	50	100%		

Table 3: Comparison of Socioeconomic Status of Patients Studied

All patients in both groups are presented with symptoms of bleeding per anum and prolapsed mass, while 20 patients in MIPH group and 21 patients in open hemorroidectomy group are presented with symptoms of pain. Only 12 patients in MIPH group and 10 patients in open hemorroidectomy group are presented with pruritus.(Table-5)

Clinical	MIPH		Open hemori	oidectomy	Total	
presentation	No	%	No	%	No	%
Bleeding	25	100%	25	100%	50	100%
Prolapse mass	25	100%	25	100%	50	100%
Pain	20	80%	21	84%	41	82%
Pruritus	12	48%	10	40%	22	44%

**Table 5: Comparison of Clinical Presentation in Two Groups** 

Mean duration of surgery was 27.5 minutes in MIPH group and 51.5 minutes in open hemorroidectomy group. Thus average duration of surgery in open hemorroidectomy was 50 minutes as compare to 30 minutes in MIPH group. These data clearly shows that duration of surgery was quite less in MIPH group. Most of the patients (68%) in MIPH group complained of mild post-operative pain which subside by only giving analgesic. While most of the patents (52%) in open

hemorroidectomy group complained of moderate amount of postoperative pain which require round the clock analgesics. Only 12% patients in MIPH group complained of severe postoperative pain compare to open hemorroidectomy group in which 28% patients complained of severe postoperative pain which require strong opioid analgesics and sedatives. Analgesia requirement was significantly lower in MIPH group. (Table-6)

Table 6: Comparison of Postoperative Pain Score i	n Both Groups
---	---------------

Postoperative	MIPH	-	Open Hemorroidectomy		
pain score	No	%	No	%	
Mild (0-3)	17	68%	5	20%	
Moderate (4-7)	5	20%	13	52%	
Severe (8-10)	3	12%	7	28%	

Only 4% patients in MIPH group complained of immediate post op bleeding compare to 20% patients in open hemorroidectomy group complained of immediate post op bleeding which was in form of soakage of dressing or few drops blood while passing faeces.

28% patients in open hemorroidectomy group developed post op urinary retention out of which 11% patients require catheterization and rest of patients require analgesics and hot water fomentation for relief. In comparison to MIPH group only 4% patients developed post op urinary retention which requires only hot fomentation and analgesic. 20% patients in open hemorroidectomy group complained of short term post op incontinence to flatus as compared to 0% patients in MIPH group complained of incontinence to flatus.(Table-7)

Post op	MIPH		Open hemorroidectomy		Total	
complications	No	%	No	%	No	%
Bleeding	1	0%	5	20%	6	12%
Retention of urine	1	4%	7	28%	8	16%
Incontinence to flatus	0	0%	5	20%	5	10%

 Table 7: Comparison of Immediate Post of Complications

Mean duration of time needed to return to work was 5.5 days in MIPH group (100%) compare to 23.9 days in open hemorroidectomy group which was much earlier than open group. Though MIPH is costly, early resumption to work helps economically to the patients.(Table-8)

Table 8. Comparison of Require Total Time to Resume Routine work								
Days	MIPH		<b>Open Hemorroidectomy</b>					
	No	%	No	%				
1-10 days	25	100%	0	0%				
11-20 days	0	0%	4	16%				
21-30 days	0	0%	21	84%				
Total	25	100%	25	100%				

 Table 8: Comparison of Require Total Time to Resume Routine Work

## Discussion

For symptomatic grade 3 and 4 hemorrhoids, some form of hemorroidectomy remains the accepted modality of treatment. The traditional like Milligan—Morgan methods the method [1] and the Ferguson's method [2] have been in practice for more than half a century for want of a better alternative. Recent years have seen the introduction of newer techniques with relative merits and demerits. The most significant recent introduction has been the circular stapling device (MIPH) for prolapsed haemorrhoids. This has been criticized for not treating the external component of haemorrhoids and the skin tags. Additionally the stapler cartridges are expensive and beyond the reach of most patients.

In present study both groups were demographically comparable. Mean age in our study was 46.3 years. Thirumalagiri et al conducted similar study in which mean age of presentation 45.8 years. Male patients were more in number in both groups of patients. In our study, the most commonly affected people in MIPH group belonged to upper (60%) and middle class (36%), while in open hemorroidectomy group, maximum number of patients (40%) came from lower class. This was most likely due to cost effectiveness of open hemorroidectomy as compared to MIPH owing to additional cost of stapler in later group.

In the present study, only patients with grade 3 and grade 4 hemorrhoids were included with presenting complaints of bleeding and prolapsed mass. Few patients presented with complaints of pain and pruritus. In the study done by Thirumalagiri et al, bleeding, pain And mass per rectum were the most common complaints in patients grade and of III grade IV.[7]Rathore et al, in their study included patients with second and third degree of hemorrhoids, who mostly visited hospital with the complaints of bleeding per rectum and prolapsed of piles during defecation.

In the study done by Iqbal et al, of total fifty Eight patients who underwent stapled hemorroidectomy, 3(5.17%) had second degree, 46(79.31%) had third degree hemorrhoids and9(15.51%) had fourth degree hemorrhoids respectively. The most common problem reported pre operatively was something coming out Of the anus. Others included bleeding, itching, discharge and pain.

Mean duration of surgery was 27.5 minutes and 51.5 minutes in MIPH and Open hemorroidectomy group respectively. Statistically significant difference was seen in the duration of surgery amongst the two groups .In the study done by Thirumalagiri et al, the operating time for stapler hemorroidectomy was 28.7 minutes and for open hemorroidectomy was 36.2 minutes. The mean operating time for open group was significantly higher than the stapled group in the study conducted by Baliga et al. Pain in MIPH group was significantly compared lesser as to open hemorroidectomy group as hemorroidopexy is performed above the dentate line, where mucosa is insensitive to pain. Similar findings were observed in studies done byBaliga et al and Kim et al.

The requirement of analgesia in MIPH group was significantly lesser compare to open group. Total complications were significantly higher in patients who underwent open hemorroidectomy in our Baliga study. et al. the stapled hemorroidectomy group had an incidence of complications of 20% compared to 30% for the open hemorroidectomy group, the difference was not statistically significant. In another study, the postoperative bleeding rate was 4.9 % in both groups and the rate of urinary retention did not differ significantly (4.9 % vs. 1.6 %). The mean of stav at hospital duration was significantly lower in the MIPH group .Lesser duration of stay was due to faster

recovery in MIPH group. In the study done by Thirumalagiri et al, mean post-operative hospital stay in MIPH group was 1.1±0.35 davs and 2.3±1.2 davs in open hemorroidectomy group, which was statistically significant. In study by Gravie et al, Hospital stay was significantly shorter in the stapled hemorroidectomy group 2.2 days  $\pm$  1.2 as compared to open hemorroidectomy group 3.1 days  $\pm$  1.7.

Mean duration of time needed to return to work in MIPH group was significantly lesser as compared to Open hemorroidectomy. In study done by Aggarwal et al, in the open hemorroidectomy group, the patients returned to work postoperatively in twenty five days on average (range: 20-30 days), in the stapler-hemorroidopexy group,52% were able to return to their normal routine and work in two days, 32% in three days and only 16% in four days.

MIPH is expensive as compared to open technique. In open group there were many factors to increase expenses like longer postoperative hospital stay and late resumption of routine work(resulting in loss of working days), but MIPH is still more costlier. Disposable nature of MIPH instrument increases cost of therapy but future advances in MIPH can make it cheaper, re-usable and universally available.

## Conclusion

Conventional hemorroidectomy is still performed in many higher centers but in this era of minimal invasive surgery, stapler hemorroidopexy is fast replacing conventional hemorroidectomy. Following conclusions have been summarized from the study:

• Out of the two techniques, open hemorroidectomy is universally available, simple to learn, economical procedure with few complications and associated with longer wound care and long duration of morbidity.

- MIPH has less peri-operative and postoperative complications. Patients undergone MIPH had less blood loss with less postoperative pain and morbidity.
- MIPH is associated with shorter postoperative hospital stay and quicker return to routine work. MIPH has greater patient satisfaction and better functional outcome – quality of life.
- Though MIPH is costly, early resumption of work may help economically.
- MIPH has a longer learning period but duration of surgery can be shortened with experience.
- Disposable nature of MIPH instrument increases cost of therapy but future advances in MIPH can make it cheaper, re-usable and universally available.

Both surgical modalities are equally efficacious in curing internal hemorrhoids but open hemorroidectomy is preferred for internal hemorrhoids with anal fissure, anal fistula, skin tags and external hemorrhoids.

## References

- 1. Milligan ETC, Morgan CN, Jones LE, Officer R. Surgical anatomy of the anal canal and the operative treatment of hemorrhoids. Lancet. 1937; 2:1119– 1124.
- Ferguson JA, Heaton JR. Closed hemorroidectomy. Dis Colon Rectum. 1959; 2:176–179
- 3. Engel AF, Eijsbouts QA. Hemorroidectomy: painful choice. Lancet. 2000; 355:2253–2254
- 4. https:// www.researchgate.net/ publication/ 250234554 Open Hemorroidectomy
- https://www.researchgate.net/ publication/ 303364079 Stapled versus conventional surgery for hemorrhoids
- Palimento D, Picchio M, Attanasio U, Lombardi A, Bambini C, Renda A. Stapled and open hemorroidectomy: randomized controlled trial of early

results. World J Surg. 2003 Feb;27(2):203-7.

- 7. https://www.pjmhsonline.com/2014/ap r june/pdf/491%20 Outcome% 20 of %20Stapled% 20Haemorrhoidectomy % 20Versus% Open % 20 Haemorrhoidectomy % 20A% % 20control% 20Randomized 20trial.pdf Stapled Hemorroidectomy Procedure Recovery & Complications (medicinenet.com)
- Nisar PJ, Acheson AG, Neal KR, Scholefield JH. Stapled hemorroidopexy compared with conventional hemorroidectomy: systematic review of randomized, controlled trials. Dis Colon Rectum. 2004 Nov;47(11):1837-45.
- 9. Chong PS, Bartolo DCC. Hemorrhoids and fissure in ano. Gastroenterology Clinics of North America. 2008;37:627–644.
- 10. Kaidar-Person O, Person B, Wexner SD. Hemorrhoid disease: a comprehensive review. J Am CollSurg 2007; 204:102–117.
- Alonso-Coello P, Castillejo MM. Office evaluation and treatment of hemorrhoids. J Fam Pract. 2003;52:366 -374.
- 12. Kann BR, Whitlow CB. Hemorrhoids: diagnosis and management. Tech Gastrointest Endosc. 2004; 6:6–11.
- Jayaraman S, Colquhoun PH, Malthaner RA. Stapled versus conventional surgery for hemorrhoids. Cochrane Database System Rev. 2006; (4):CD005393.
- 14. Tjandra JJ, Chan MK. Systematic review on the procedure for prolapse and hemorrhoids(stapled hemorroidopexy). Dis Colon Rectum. 2007;50(6):878-892.
- VarunRajuThirumalagiri,Ramachandre rRao. A Comparative Study of Open Hemorroidectomy with Minimally Invasive Procedure for Hemorrhoids. IOSR Journal of Dental and Medical Sciences (IOSR-JDMS).Volume 16,

Issue 1 Ver. VIII (January. 2017), PP 51-56.

- 16. Rajesh Kumar Rathore, Kishna Ram Poonia. "Second and Third Degree Hemorrhoids: Management with Minimally Invasive Procedure for Hemorrhoid (MIPH) and Outcome". Journal of Evolution of Medical and Dental Sciences. International Journal of Scientific Research. 2015; 4(01), 59:7(8): August-2018 January 01; 23-30,
- 17. Baliga K, Chetty DV. Stapler hemorroidectomy versus open hemorroidectomy. International Surgery Journal. 2016 Dec 10;3(4):1901-5.
- Iqbal MR, RAFI Y, JAVED S. Stapled hemorroidopexy: The Mayo Hospital experience. Pakistan Journal of Medical and Health Sciences. 2012 Jun;6(2):476-9.
- 19. Gravié JF, Lehur PA, Huten N, Papillon M, Fantoli M, Descottes B, Pessaux P,

Arnaud JP. Stapled hemorroidopexy versus milliganmorganhemorrhoidectomy: a prospective, randomized, multicenter trial with 2-year postoperative follow up. Annals of surgery. 2005 Jul;242(1):29.

- 20. Kim JS, Vashist YK, Thieltges S, Zehler O, Gawad KA, Yekebas EF, Izbicki JR, Kutup A. Stapled hemorroidopexy versus Milliganhemorroidectomy Morgan in circumferential third-degree hemorrhoids: long-term results of a randomized controlled trial. Journal of Gastrointestinal Surgery. 2013 Jul 1;17(7):1292-8.
- 21. H Aggarwal, R Bansod, P Lubana, D Jain, R Mathur. Stapler Hemorroidopexy As Compared To Conventional Hemorroidectomy: A Short-Term Prospective Randomized Controlled Study. The Internet Journal of Surgery. 2007 Volume 16 Number 1.