Original Article

COMPARISON OF POSTOPERATIVE HEMORRHAGE IN STAPLED HEMORRHOIDOPEXY VERSUS MILLIGAN MORGAN HEMORRHOIDECTOMY.

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ABSTRACT

Background: The objective of the study was to compare Milligan Morgan hemorrhidectomy with Stapled Hemorrhoidopexy in terms of frequency of moderate to severe post operative hemorrhage.

Materials and Methods: This Retrospective Comparative study was done from January 2024 to November 2024. Hospital records were checked for patients undergoing Miligan Morgan Haemorrhoidectomy (MMH) and Stapled Hemorrhoidopexy (SH) from January 2024 to November 2024. A total of 91 patients were found to undergo surgery for hemorrhoids who developed post operative hemorrhage. They were divided in to two groups Group A had undergone standard MMH with electrocautery and consisted of 52 patients. The remaining 39 patients were found to undergo SH by using PPH03 circular stapling gun and thus were included in Group B. Both groups were compared for moderate to severe post operative bleeding.

Results: Although a higher frequency of moderate to severe post operative hemorrhage was observed in SH Group (25.6%) as compared to MMH Group (17.3%), However, the difference was not statistically significant between MMH and SH in terms of bleeding post operatively (p=0.339).

Conclusion: SH and MMH are not superior to each other in terms of moderate to severe post-operative hemorrhage. Both procedures can be performed as per the surgeon's preference or patient's choice.

Key Words: Post operative Hemorrhage, Milligan Morgan Hemorroidectomy (MMH), Stapled Hemorrhoidopexy (SH).

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INTRODUCTION

Hemorrhoids or Piles constitute a major chunk of the surgical workload.[1] Surgery for hemorrhoids is done usually after the failure of conservative management.[2] The MMH is considered as the gold standard in the surgical management of haemorrhoids and continues to be the most commonly practiced surgical procedure in this regard. However, certain complications are usually reported with MMH such as post operative hemorrhage, Post operative pain and local discharge.[3] Stapled Hemorrhoidopexy (SH) is not a new but a relatively newer procedure. Because of shorter post operative hospital stays and lesser post operative pain, it has gained acceptance as a viable option over the course of time.[4] One of the common complications associated with both procedures is post operative hemorrhage. It is however, sometimes of such severity that the patients need transfusion, readmission and

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sometimes re-intervention. Across many studies, the post operative hemorrhage frequency is found to be 4.93%, 5.1%, 5.7 % or 14.7% in study population who underwent SH.[5,6,7,8] Post operative hemorrhage in MMH also has a range of reported frequencies in different studies. It is reported as low as 0.6-10% to as high as 46.6%.[2,8] Both procedures have been compared with each other all over the world in different Randomized control trials. There are varied results with some studies reporting no statistically significant difference in terms of post operative bleeding.[9, 10, 11,12] However, some studies have contradicting results reporting SH to be superior to MMH in terms of complications and post operative bleeding.[13,14] This study aimed to find out the better surgical procedure for management of hemorrhoids in our set up that has significantly lower frequency of post operative hemorrhage thus saving the meager financial and medical resources in a country with limited medical resources.

MATERIALS AND METHODS

This retrospective comparative study was done for a period ranging from January 2024 to November 2024 in a secondary care hospital after seeking approval from the Ethical Review Board of the hospital IRB No. 21 dated 10 November 2024. Since this was a retrospective study, consent from the patients for this particular study was not possible to get. However, a general consent for the use of their data was already sought as part of procedural consent for surgery. Patients with age ranging from 20 to 70 years of both genders who had undergone elective surgery for hemorrohoids for third- and fourth-degree hemorrhoids and were presented with post operative hemorrohoids were included. Exclusion criteria included Co-morbidity (Ischemic Heart disease, Diabetes mellitus, hypertension) Bleeding disorders Co existing disease such as thrombosed hemorrhoids, fistula in ano, ano-rectal mass and fissuresa nd with history of use of anticoagulation / antiplatelet drugs. The final study population consisted of 91 patients meeting inclusion and exclusion criteria who underwent haemorrhoid surgery in our hospital from January 2024 to November 2024 and had documented post operative hemorrhage. The hospital record was thoroughly searched for all eligible patients' demographic record such as name, age, address, hospital number; phone number and gender etc were noted. The study population was divided into two groups namely Group A and Group B. Patients in Group A had undergone MMH using electrocautery while Group B had undergone SH using PPH03 circular stapling gun. After going through all of the operation and admission notes, it was found out that all procedures were performed under spinal (n=81) or general (n=10) anesthesia. All the surgeries were performed by consultant surgeons of a single surgical team. Stool softeners were given to all patients in order to make stools soft. A 2% lidocaine gel was also prescribed to all patients to make defecation relatively pain free. Sixty-Seven (73.62%) patients were discharged within 48 hours of surgery. As per the patient's hospital papers and post operative notes, post operative hemorrhage was divided into 3 categories namely (a) Spotting, (b) Minor bleeding (Partial soakage of dressing), (c) Severe bleeding (Soakage of dressing). Within the first 48 hours post operatively, hemorrhage was considered to be only fresh bleeding from the surgical site. Patients with severe hemorrhage were taken to the operation room for control of hemorrhage accordingly. Minor bleeding and spotting as mentioned in patient's notes were dealt with conservatively. A specially designed performa was used to record all the information which included demographic data of patients, group allotted, degree of hemorrhoids and bleeding as per the category. Statistical Package for the Social Sciences Statistics for Windows (version 21.0; Armonk, NY: IBM Corp., USA) was used to analyze all the data. Quantitative variables were analyzed using Means and Standard Deviation (SD) such as age. Frequencies and percentages were used for qualitative variables such as gender and post operative bleeding. Severity of hemorrhage data was stratified for

age and gender. Keeping p-value significant at <0.05, both the groups were compared in terms of frequency of post operative hemorrhage using Chi square test.

RESULTS

The study population comprised of 91 patients, with 3rd and 4th degree haemorrhoids, who were divided in to two groups A and B. Group A consisted of 52 patients whereas Group B had 39 patients. Group A included patients who had undergone MMH and group B included patients who had undergone SH using PPH03 stapling gun. The age distribution ranged from 20-70 years. In Group A, the mean age was 38.0 ±10.129 years. In group B, the mean age was found to be 41.54 ±11.718 years. There were 84.6% (n=44) males and 15.4% (n=8) females in Group A whereas group B was found to have 87.2% (n=34) males and 12.8% (n=5) females. With respect to age and gender, both groups were found comparable with a p-value 0.127 for age and p-value 0.733 for gender as seen in Table 1.

Table 1: Comparison of two groups for in terms of Gender and Mean Age

Gender	Group A (n=52)	Group B (n=39)	P Value
Male	44 (84.6%)	34 (87.2%)	p=0.733
Female	8 (15.4%)	5 (12.8%)	
Mean Age in Years	38.0 ±10.129	41.54 ±11.718	p=0.127

Out of total 91 patients, 61 (67%) had had spotting, 11 (12%) had minor bleeding and 19 (20.87%) had severe bleeding. Out of these 19 patients, 17 had complete soakage of dressing whereas 2 had soakage of clothes as well. A total of 9 patients (17.3%) developed severe post operative hemorrhage in Group A. Out of remaining 43 patients in Group A, 36 (83.73%) had only spotting whereas 7 (16.27%) had minor post operative hemorrhage. On the other hand, 10 (25.6%) patients developed severe post operative hemorrhage in Group B. Twenty five (64.1%) patients had only spotting and four (10.25%) patients had minor post operative hemorrhage depicted in Figure 1.

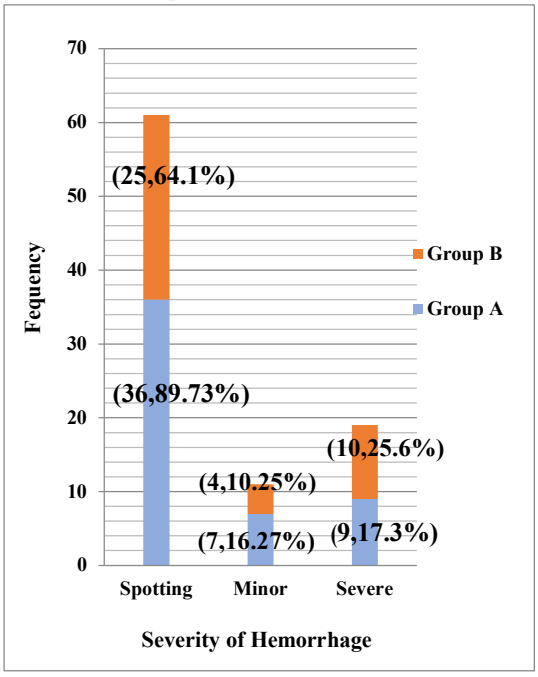

Figure 1: Frequency and Severity of Hemorrrhage

Although, Group B had more percentage of patients with severe post operative bleed as compared to Group A (25.6% versus 17.3%), there was no statistically significant difference in terms of the frequency of severe post operative hemorrhage in both groups as seen in (p-value=0.339) Table 2.

Table 2: Comparative Frequency of Moderate to Severe Post Operative Hemorrhage

Severe Post Operative Hemorrhage	GROUP A (n=52)	GROUP B (n=39)	p Value
Present	9 (17.3%)	10 (25.6%)	0.339
Absent	43 (82.7%)	29 (74.4%)	

DISCUSSION

Hemorrhoids form a major portion of the surgical workload.[1] Surgery for hemorrhoids is done usually after the failure of conservative management There are many post operative complications encountered after hemorrhoid surgery such as postoperative hemorrhage, pain ano-rectal stricture.[2] Post operative hemorrhage is a significant complication that may require infusion, admission and even re-operation. This retrospective comparative study provided us an opportunity to find out the frequencies of severe bleeding after two different surgical procedures and comparing them to ascertain a better technique in this regard in our setup. There was an increasing concern about post operative hemorrhage requiring surgical hemostasis after SH. It was deemed necessary to look into hospital record retrospectively and compare MMH and SH as done in the study. No such study was done in our hospital previously. SH has been compared with conventional MMH in many randomized controlled trials.[12,15,16,17] Some meta-analysis have also been done that reveal mixed results.[18,20] Till date, there is no definitive result. SH was found to have post operative pain significantly less than MMH. It was also associated with lesser pain with the first. However, interestingly enough, none of the trials reported any statistically significant difference between the two procedures. The central finding of this retrospective comparative study is that the difference in the frequency of moderate to severe post-operative hemorrhage between SH and MMH was not statistically significant (p=0.339). This also means that both the procedures are comparable to each in this aspect. Gupta et al performed a long term follow up after SH spanning over 33 months in 2003. In this SH trial and long term follow up, there was no statistically significant difference between the two procedures in terms of post operative bleeding, functional outcomes, quality of life and post operative pain. Our results are in accordance with the result of these studies. Despite the areas of agreement, some studies have reported contradictory results, indicating that SH may be superior to MMH in terms of post-operative bleeding and other complications.[13,14] Current study is in contradiction to these results. Through SH seems to be simpler in technique and application, a number of complications are associated with it such as ano-rectal perforations, dehiscence (which may require colostomy) and severe pelvic infections. Acute ano-rectal obstruction has also been reported. Therefore, proper training is required for actual employment of the procedure.[18,19,20] This study has a few limitations. Being a retrospective study is the biggest limitation. A prospective experimental study or randomized trial would be a better option. Including only elective cases of hemorrhoid surgery was another limitation. This study only focused on one complication of the procedures thereby improving but narrowing focus of the study at the same time. Also, this is a single center study. More randomized trials with larger study population in multiple centers may improve the quality of studies on this subject.

CONCLUSION

This study concludes that in terms of post operative hemorrhage, MMH and SH are not superior to each other. Although SH has been projected to have lesser post operative pain and decreased procedural duration, both procedures remain comparable to each other in this aspect. The high cost associated with the PPH03 circular stapling gun used for SH becomes a major decision factor especially in a country like Pakistan, with meager financial and medical resources. MMH remains the most affordable and often the best choice for those who cannot bear the cost of the stapling device. This study provides evidence for allowing procedure selection based on the surgeon's preference or the patient's financial capacity.

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CONFLICT OF INTEREST

None

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AUTHOR'S CONTRIBUTION

ZA: Concept, Data Collection, Surgeries, Manuscript Draft writing, Final approval
OBAA: Concept, Design, Analysis of data, manuscript revision, Final approval
MJ: Concept of work, critical review of manuscript, Final approval
MAM: Design of study and Analysis of data, Revision of manuscript, Final approval
BA: Analysis of data, Manuscript drafting, Final approval
NARAT: Analysis, critical review of draft Manuscript, Final approval

REFERENCES

1. Aibuedefe B, Kling SM, Philp MM, Ross HM, Poggio JL. An update on surgical treatment of hemorrhoidal disease: a systematic review and meta-analysis. Int J Colorectal Dis. 2021;36(10):2041-9. doi.org/10.1007/s00384-021-03953-3
2. Cristea C, Lewis CR. Hemorrhoidectomy. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2024 Jan–. PMID: 31751054.
3. Lehmann JP, Johansson HÖ, Graf W. Long-term functional results after excisional haemorrhoidectomy. Colorectal Dis. 2020 Jul;22(7):824-830. doi.org/10.1111/codi.14954
4. Sanchez C, Chinn BT. Hemorrhoids. Clin Colon Rectal Surg. 2011;24(1):5-13. doi: 10.1055/s-0031-1272818
5. Alam J, Ahmed N, Iqbal J, Zarin M. Complications of stapled hemorrhoidectomy. J Med Sci. 2010; 18 (1):29-31.
6. Butterworth JW, Peravali R, Anwar R, Ali K, Badshah B. A four-year retrospective study and review of selection criteria and post operative complications of stapled hemorrhoidectomy. Tech Coloproctol. 2012;16(5):369-72. doi.org/10.1007/s10151-012-0862-1
7. Athar A, Chawla T, Turab P. Stapled Hemorrhoidopexy: The Agha Khan University Hospital Experience. Saudi J Gastroenterol. 2009;15(3):163-6. doi: 10.4103/1319-3767.45358
8. Afridi N, Nazeem S, Hussain A, Khan M. Initial experience with stapled haemorrhoidectomy for treatment of symptomatic haemorrhoids. J Postgrad Med Inst. 2011;25(2):143-6.
9. Burch J, Epstein D, Baba-Akbari A, Weatherly H, Fox D, Golder S, et al. Stapled haemorrhoidectomy (haemorrhoidopexy) for the treatment of haemorrhoids: a systemic review and economic evaluation. Health Technol Assess. 2008;12(8):1-193.
10. Shao WJ, Li GC, Zhang ZH, Yang BL, Sun GD, Chen YQ. Systemic Review and meta analysis of Randomized controlled trials comparing stapled haemorrhoidopexy with conventional haemorrhoidectomy. Br J Surg. 2008;95(2):147-60. doi.org/10.1002/bjs.6078
11. Pescatori M, Gagliardi G. Postoperative complications after procedure for prolapsed hemorrhoids (PPH) and staples transanal rectal resection (STARR) procedures. Tech Coloproctol. 2008;12(1): 7-19. doi: 10.1007/s10151-008-0391-0
12. Poskus T, Danys D, Makunaite G, Mainelis A, Mikalauskas S, Poskus E, et al. Results of the double-blind randomized controlled trial comparing laser hemorrhoidoplasty with sutured mucopexy and excisional hemorrhoidectomy. Int J Colorectal Dis. 2020;35(3):481-90. doi.org/10.1007/s00384-019-03460-6
13. Laughlan K, Jayne DG, Jackson D, Rupprecht F, Ribaric G. Stapled

haemorrhoidopexy compared to Milligan – Morgan and Ferguson haemorrhoidectomy: a systemic review. Int J Colorectal Dis. 2009;24(3):335-44. doi: 10.1007/s00384-008-0611-0

14. Jin JZ, Bhat S, Lee KT, Xia W, Hill AG. Interventional treatments for prolapsing haemorrhoids: network meta-analysis. BJS Open. 2021 Sep 6;5(5):zrab091. doi: 10.1093/bjsopen/zrab091

15. Wang JY, Tsai HL, Chen FM, Chu KS, Chan HM, Huang CJ, et al. Prospective randomized, controlled trial of Starion Vs Ligasure hemorrhoidectomy for prolapsed hemorrhoids. Dis Colon Rectum. 2007; 50(8):1146–51. doi.org/10.1007/s10350-007-0260-3

16. Yang H, Shi Z, Chen W, Chen T, Ding P, Wang J, et al. Modified ligation procedure for prolapsed haemorrhoids versus stapled haemorrhoidectomy for the management of symptomatic haemorrhoids (MoLish): randomized clinical trial. BJS Open. 2022;6(3):zrac064. doi.org/10.1093/bjsopen/zrac064

17. Zhai M, Wu Y, Xu R, Zhang Z. Evaluation of clinical efficacy of suture-fixation mucopexy in the treatment of prolapsed hemorrhoid. Minerva Surg. 2022; 77(3):252-6. doi.org/10.23736/s2724-5691.20.08526-0

18. Ruan QZ, English W, Hotouras A, Bryant C, Taylor F, Andreani S, et al. A systematic review of the literature assessing the outcomes of stapled haemorrhoidopexy versus open haemorrhoidectomy. Tech Coloproctol. 2021;25(1):19-33. doi.org/10.1007/s10151-020-02314-6

19. Zhang G, Liang R, Wang J, Ke M, Chen Z, Huang J, et al. Network meta-analysis of randomized controlled trials comparing the Stapled Hemorrhoidopexy, Milligan-Morgan hemorrhoidectomy and tissue-selecting therapy stapler in the treatment of grade III and IV internal hemorrhoids (Meta-analysis). Int J Surg. 2020;74:53-60. https://doi.org/10.1016/j.ijsu.2019.12.027

20. Du T, Quan S, Dong T, Meng Q. Comparison of surgical procedures implemented in recent years for patients with grade III and IV hemorrhoids: a network meta-analysis. Int J Colorectal Dis. 2019;34(6):1001-12. doi: 10.1007/s00384-019-03298-6