

Postoperative Pain Comparison Between Open Hemorrhoidectomy and Stapled Hemorrhoidopexy on Internal Hemorrhoid at Siloam Hospitals Lippo Village

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Abstract

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Background: Hemorrhoids have a prevalence of 4,4%. Surgery is one of the modalities for treating hemorrhoids. The method accepted as the "golden standard" is open hemorrhoidectomy. Although considered effective, open hemorrhoidectomy is still often associated with a significant rate of morbidity and pain symptoms that are a complaint of most patients. Therefore, another method is an alternative, namely, stapled hemorrhoidopexy. Some studies showed that stapled hemorrhoidopexy has a lower occurrence of postoperative pain, and others offer the opposite.

Methods: This study was conducted at Siloam Hospitals Lippo Village between February and March 2019. Samples were taken as many as 70 patients by taking secondary data from medical records. Patients diagnosed with third or fourth degree hemorrhoids and undergoing open hemorrhoidectomy or stapled hemorrhoidopexy will be taken the pain score from the visual analogue scale. Data is then tabulated using Microsoft Excel and analysed using SPSS.

Result: the occurrence of postoperative pain in the stapled hemorrhoidopexy and open hemorrhoidectomy group, respectively, are 80% and 97%, with a p-value of 0,055. The average visual analogue scale score for open hemorrhoidectomy and stapled hemorrhoidopexy was $3 \pm 1,39$ and $2 \pm 1,39$, respectively, with a p-value of 0.003.

Conclusions: the result showed that the occurrence of postoperative pain was not statistically significant. And the average visual analogue scale score was lower in the stapled hemorrhoidopexy group.

Introduction

Hemorrhoids are a normal structure in the form of a vascular cushion in the anal canal, which can become pathological when the tissue is dilated and prolapsed.^{1,2} A study in the United States showed that hemorrhoids have a prevalence rate of 4.4%.³ In Indonesia, there are approximately ten million people who experience this disease, with a prevalence of about 4%

Surgery is one of the modalities to treat hemorrhoids. The method that is accepted as the "golden standard" is open hemorrhoidectomy.^{5,6} Although it is considered effective, open hemorrhoidectomy is still often associated with significant morbidity, as well as pain symptoms that are the complaint of the majority of patients.⁷ alternatives, one of which is stapled hemorrhoidopexy.⁸

A prospective study conducted by Sachin,⁹ showed postoperative pain after

open hemorrhoidectomy and stapled hemorrhoidopexy, 56% and 30%, respectively. There are still contradictions to the results of these studies. Research conducted by Mattana,¹⁰ showed the opposite results. Pain that occurs in open hemorrhoidectomy and stapled hemorrhoidopexy is 24% and 28%, respectively.

Material And Methods

This study uses an analytical study with a cross-sectional design. The study was conducted on patients who underwent open hemorrhoidectomy or stapled hemorrhoidopexy at Siloam Hospitals Lippo Village. The study was conducted in the period from February to March 2019 using medical record data.

Postoperative pain was determined by the visual analogue scale (VAS) of patients undergoing open hemorrhoidectomy or stapled hemorrhoidopexy. If the VAS value $\neq 0$, it will be included in the pain group and vice versa. The VAS value is the subjective degree of pain felt by the patient. The inclusion criteria in this study included a diagnosis of grade III or IV internal hemorrhoids and undergoing open hemorrhoidectomy or stapled hemorrhoidopexy surgery. Exclusion criteria used were acute hemorrhoids with thrombosis, fistula, fissure, anal stenosis, or a history of previous hemorrhoid surgery. After going through the inclusion and exclusion process, the data were entered into the research database and analysed.

The estimated number of samples required is 60 samples. To anticipate incomplete or missing data, the number of samples was increased by 10% to 66 samples. The samples will be divided into two groups, namely, 33 samples for the open hemorrhoidectomy group and 33 samples for the stapled hemorrhoidopexy

group. The number of samples obtained as many as 70 samples.

The data that has been taken is then tabulated using the Microsoft excel 2017 program and analysed using the SPSS version 23 program. Statistical tests in this study were carried out using the Fisher exact test and Mann U-Whitney.

Result

The samples were divided equally between stapled hemorrhoidopexy and open hemorrhoidectomy group. The average age of the entire sample is 41.92 years, with the lowest age being 19 years and the highest age being 70 years. The median age is at the age of 43 years. The most common age found is 43 years. The age category shows that the most samples were found in the age range between 41-50 years, as many as 27 samples. The samples at least are in the age category above 60 years, as many as five people.

In the group that underwent open hemorrhoidectomy, 77.1% of patients had grade III, and the rest had grade IV internal hemorrhoids. Meanwhile, in the stapled hemorrhoidopexy group, 88.6% of patients had grade III, and the remaining had grade IV internal hemorrhoids.

Of the 70 patients sampled in the study, 35 patients underwent open hemorrhoidectomy, and 35 patients underwent stapled hemorrhoidopexy. 97.1% of the open hemorrhoidectomy group experienced postoperative pain, while only 80% of the stapled hemorrhoidopexy group experienced pain. The significance value (p-value) obtained based on the Fisher exact test is 0.055, which is not statistically significant. Therefore, the OR obtained is not meaningful.

The open hemorrhoidectomy group had an average VAS of 3, with the highest score of 8 and the lowest being 0. The

stapled hemorrhoidopexy group had an average VAS of 2, with the highest value of 6 and the lowest value of 0. Based on the Mann-Whitney U test, a significant value was obtained. (p-value) of 0.003, which means significant.

Table 1. Sample demographics

	Stapled Hemorrhoidopexy		Open hemorrhoidectomy	
	n	%	n	%
Sex				
Male	20	57,14	15	42,85
Female	15	42,85	20	57,14
Age				
<31	4	11,4	9	25,7
31-40	8	22,9	7	20
41-50	13	37,1	14	40
51-60	7	20	3	8,6
>60	3	8,6	2	5,7
Grading				
Grade III	31	88,6	27	77,1
Grade IV	4	11,4	8	22,9

Table 2. Comparison of the incidence of postoperative pain

Surgery technique	Postoperative pain				Total		OR (95%CI)	P-value
	No		Yes		n	%		
Stapled hemorrhoid opexy	7	20	28	80	35	100	8,5 (0,986-73,276)	0,055
Open hemorrhoid ectomy	1	2,9	34	97,1	35	100		
Total	8	11,42	62	88,57	70	100		

Table 3. Visual analogue scale averagescore

Surgery technique	n	mean±standard deviation	P-Value
Open hemorrhoidectomy	35	3±1,39	0,003
Stapled hemorrhoidopexy	35	2±1,39	

Discussion

A total of seventy patients who underwent surgery and met the inclusion criteria were included in this study. Each of thirty-five patients underwent open hemorrhoidopexy, and thirty-five others

underwent stapled hemorrhoidopexy. Visual analogue scale values were taken from each patient after undergoing surgery. This value is used to measure postoperative pain. In the open hemorrhoidectomy group, 42.85% of patients were male, while 57.14% were female. For the group that underwent stapled hemorrhoidopexy, most patients (57.14%) were male, and 42.85% were female.

The average age of the sample in this study was 41.92 years. For each group in the study conducted by Sachin⁹, the mean age of the patients obtained was 40.06 years. Meanwhile, in Mattana's study¹⁰, the mean age for open hemorrhoidectomy and stapled hemorrhoidopexy was 51.6 and 48.1, respectively.

Overall, 82.9% of patients had grade III internal hemorrhoids, and 17.1% had grade IV internal hemorrhoids. In Sachin's study⁹, most patients (53%) were diagnosed with grade IV internal hemorrhoids.

Open hemorrhoidectomy is the most radical technique and has the highest morbidity compared to other less invasive procedures.⁷ This is because extensive dissection and incisions are made below the dentate line, causing more severe postoperative pain. In contrast, in stapled hemorrhoidopexy, the resulting staple line is above the dentate line, proximal to the somatic nerve fibres in the anal canal.¹¹ It makes the patient feel less pain.¹²

The quality of pain felt after open hemorrhoidectomy and stapled hemorrhoidopexy is also different. In an open hemorrhoidectomy, the pain felt has sharp and tearing characteristics. Meanwhile, on stapled hemorrhoidopexy, only vague pain and discomfort are felt by the patient.¹³

The results obtained matched the previous studies,^{9,14} but some differences may affect the results of this study. First,

the research design used was cross-sectional with a retrospective document search. The data collected is secondary data from the medical records of Siloam Hospitals Lippo Village patients for the period 2012-2019. This data collection method had to be done because the prevalence was low and limited research time. Another disadvantage of using medical records is that researchers cannot be sure whether the medical record data is accurate or not. Second, the number of samples taken is less than the research used as a reference. This situation can undoubtedly have an impact on the results of the study. And lastly, this study only focuses on postoperative pain, which is one of the factors taken into account in comparing different surgical techniques, so the results of this study cannot provide a

complete picture to compare the two surgical procedures.

Conclusion

The comparison of the incidence of postoperative pain in the stapled hemorrhoidopexy group and the open hemorrhoidectomy group was not statistically significant. The average visual analogue scale score in the stapled hemorrhoidopexy group was lower than that in the open hemorrhoidectomy group, and this result was statistically significant.

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References

1. Brunnicardi FC, Andersen DK, Billiar TR, et al. *Schwartz's Principles of Surgery*. 10th ed. McGraw-Hill; 2015.
2. Mounsey AL, Halladay J, Sadiq TS, Anne LM, Jacqueline H, Timothy SS. Hemorrhoids. *Am Fam Physician*. 2011;84(2):204-210.
3. Johanson JF, Sonnenberg A. The prevalence of hemorrhoids and chronic constipation. An epidemiologic study. *Gastroenterology*. 1990;98(2):380-386. [https://doi.org/10.1016/0016-5085\(90\)90828-o](https://doi.org/10.1016/0016-5085(90)90828-o)
4. Nugroho SHP. Hubungan aktivitas fisik dan konstipasi hemoroid di URJ bedah RSUD Dr. Soegiri Lamongan. *Surya*. 2014;02(Xviii):41-50.
5. Song S-G, Kim S-H. Optimal treatment of symptomatic hemorrhoids. *J Korean Soc Coloproctol*. 2011;27(6):277-281. <https://doi.org/10.3393/jksc.2011.27.6.277>
6. Milligan ET, Morgan C, Jones L. Surgical Anatomy of the Anal Canal, and the Operative Treatment of Hemorrhoids. *Lancet*. Published online 1937:1119-1124. [https://doi.org/10.1016/S0140-6736\(00\)88465-2](https://doi.org/10.1016/S0140-6736(00)88465-2)
7. Medina-Gallardo A, Curbelo-Peña Y, De Castro X, Roura-Poch P, Roca-Closa J, De Caralt- Mestres E. Is the severe pain after Milligan-Morgan hemorrhoidectomy still currently remaining a major postoperative problem despite being one of the oldest surgical techniques described? A case series of 117 consecutive patients. *Int J Surg Case Rep*. 2017;30:73-75. <https://doi.org/10.1016/j.ijscr.2016.11.018>

8. Longo A. Treatment of haemorrhoidal disease by reduction of mucosa and haemorrhoidal prolapse with circular stapling device: A new procedure. In: *6th World Congress of Endoscopy Surgery*. Mundozzi Editore; 1998:777-784.
9. Sachin ID, Muruganathan OP. Stapled hemorrhoidopexy versus open hemorrhoidectomy: a comparative study of short term results. 2017;4(2):472-478. <http://dx.doi.org/10.18203/2349-2902.isj20164791>
10. Mattana C, Coco C, Manno A, et al. Stapled Hemorrhoidopexy and Milligan Morgan hemorrhoidectomy in the cure of fourth-degree hemorrhoids: Long-term evaluation and clinical results. *Dis Colon Rectum*. 2007;50(11):1770-1775. <https://doi.org/10.1007/s10350-007-0294-6>
11. Sanchez C, Chinn BT. Hemorrhoids. *Clin Colon Rectal Surg*. 2011;1(212):5-13. <https://doi.org/10.1055%2Fs-0031-1272818>
12. Sun Z, Migaly J. Review of Hemorrhoid Disease: Presentation and Management. *Clin ColonRectal Surg*. 2016;29(1):22-29. <https://doi.org/10.1055/s-0035-1568144>
13. Baliga K, Chetty DV. Stapler hemorrhoidectomy versus open hemorrhoidectomy. 2016;3(4):1901-1905. <https://doi.org/10.18203/2349-2902.isj20163120>
14. Franc J. Stapled Hemorrhoidopexy Versus Milligan-Morgan Hemorrhoidectomy. 2005;242(1):29-35. <https://doi.org/10.1097/01.sla.0000169570.64579.31>