

A STUDY ON THE INDICATIONS, SPECIFICATIONS, TECHNIQUES AND RESULTS OF THE MILLIGAN - MORGAN HEMORRHOIDECTOMY AT THE MILITARY HOSPITAL 103

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SUMMARY

Objectives: To evaluate the indication, procedural specification, and results of the Milligan - Morgan hemorrhoidectomy at the Military Hospital 103. **Subjects and methods:** A prospective and retrospective study on 53 patients who underwent Milligan - Morgan hemorrhoidectomy to treat of hemorrhoids from September 2020 to November 2020. **Results:** Average age: 46.5 ± 15.3 years. The youngest was 15 years, the oldest was 84 years. The ratio of male/female: 2.3/1. Grade III hemorrhoids: 54.7%, grade IV hemorrhoids: 45.3%. Average surgical time: 34.0 ± 10.4 minutes. The average number of removed hemorrhoidal tissues: 3.15 ± 1.45 . Surgical complications: Postoperative bleeding: 4 cases (7.5%). Postoperative follow-up results: Postoperative pain: Mild pain: 9%; moderate pain 45.3%. The average length of hospital stays: 4.0 ± 1.6 days. Long - term postoperative follow-up results: No patients with recurrent hemorrhoids during the period of research were found. Time to return to normal work: 16.42 ± 7.56 days (10 - 30 days). Overall evaluation: Good 93.2%; average: 5.1%; bad 1.7%. **Conclusion:** The Milligan - Morgan hemorrhoidectomy is a relatively simple technique with fewer complications, lower recurrence rate, less pain and more quick surgery time, so this surgery has been widely applied to many types of hemorrhoids.

INTRODUCTION

Hemorrhoids have been recorded since ancient Egypt, from 1500 BC; the surgical treatment has been described from the Hippocrates period. Since then, there have been many different opinions about surgical methods and techniques. This shows that there is no perfect method and that giving treatment indications for each specific patient is controversial.

Moreover, regardless of the surgical method, postoperative pain, bleeding, and anal stenosis are still a great concern of patients and surgeons. This disease causes many problems for patients, and the treatment and operation require extensive knowledge and experience. If a surgeon is inexperienced about the surgical method, he can cause severe complications for the patient.

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In a hemorrhoidectomy, ST.Mark method (Milligan - Morgan method) described in 1937 by Milligan and Morgan quickly became the most popular method. The principle of the Milligan - Morgan surgical method is to remove every single hemorrhoid tuft and leave the mucosal bridge between the hemorrhoids, and the incision is left open without stitching [1]. According to the literature review, this method has been applied by many surgical centers and has many technical improvements. With the advantages of a relatively simple technique, fewer complications, lower recurrence rate, less pain, and faster surgery time, this surgery has been applied in many hospitals worldwide. To contribute to the evaluation of hemorrhoids surgery results, we have conducted the study: *To study the indications, specifications, techniques, and results of the Milligan - Morgan hemorrhoidectomy at the Military Hospital 103.*

SUBJECTS AND METHODS

1. Subjects

Patients were diagnosed with hemorrhoids and operated by Milligan-Morgan method at the Digestive Surgery Center, Military Hospital 103, from September 2019 to December 2020.

** Selection criteria:*

- Patients diagnosed with internal hemorrhoids III and IV, mixed hemorrhoids, circular hemorrhoids, hemorrhoids with complications (blockage - necrosis, excessive bleeding, and thrombosed hemorrhoids)

were indicated for Milligan - Morgan hemorrhoidectomy.

- Patients had full medical records.

** Exclusion criteria:*

- Patients with symptomatic hemorrhoids.
- Hemorrhoid recurrence.

2. Methods

** Study design:* Cross-sectional study.

** Surgical techniques:*

Milligan - Morgan technique in our study can be called "modified" Milligan - Morgan because there are some differences from the "original" technique.

- Step 1: The disclosure and assessment of the injury.

Procteurysis: The surgeon used two index fingers lubricated with Paraffin oil to slowly widen the anus, facilitate the rectal visit and the hemorrhoidal tissue disclosure.

- Step 2: Cutting the hemorrhoidal tissues.

In this technique, only 1 piston was used to clamp and cut the tissues instead of 3 pistons like the original technique, and each tissue was cut one by one.

Hemorrhoidectomy: An electric knife or surgical scissors could be used to remove the hemorrhoidal tissue from the skin to the anorectal mucosa, taking it from the inner circular muscular layer to the pedicle staying above the pectinate line for 5 mm (which cut through the Parks ligament).

The pedicle was stitched to stop bleeding with a 2/0 safil thread or cut with a Ligasure knife. After cutting, the base of the hemorrhoids will fall inward, if 3 tissues are cut in 3 common positions, the anus will look like a club card.

For circular hemorrhoids, it is possible to just leave a mucosal bridge and try to get the sub-mucosal tissues or apply recto annal repair, haemorrhoidal artery ligation if all of the tissues cannot be removed.

- Step 3: Examination and additional handling

For circular hemorrhoids, if it is not possible to remove all the sub-mucosal hemorrhoids, recto annal repair and combined hemorrhoidal artery ligation can be applied.

The mucosal bridge was repaired to look symmetric.

The incision was checked to ensure the good haemostasis and the anal canal is not narrowed (to insert the index finger easily).

- Step 4: The ends of the surgery

The incision was covered with Betadine solution.

Specimens were sent for medical examination.

* *Postoperative monitoring:*

Patients were followed-up 1 to 6 months after discharge. Patients were evaluated based on indicators including: difficulty with defecation, painful anal bleeding when defecating, or presence of abnormal masses in the anus...

* *Data processing:* Using SPSS software.

RESULTS

1. General characteristics

There was a total of 53 participants in our study. Average age: 46.5 ± 15.3 years.

The youngest was 15 years, the oldest was 84 years. The working age group from 30 - 59 years accounted for 62.3%. The male/female ratio was 2.3/1.

2. Characteristics of surgical indication

Grade III hemorrhoids: 54.7%, grade IV hemorrhoids: 45.3%.

The majority of patients with illness under 5 years accounted for 64.2% (34 patients). Symptoms of prolapsed hemorrhoids were found in most patients (98.1%), anal pain and discomfort accounted for 73.6%, bloody defecation accounted for 67.9%. Chronic bleeding hemorrhoids causing anemia was the most common complication, accounting for 18.4%; congestion - necrosis ranked the second, accounting for 11.3%. The number of severe acute bleeding and thrombosed hemorrhoid were similar with the rate of 3.8% and both are the cause of emergency surgery. Combined diseases: The number of anal leakage and anal papilloma, rectal polyps were similar with the rate of 5.7%.

3. Characteristics of surgery

Number of removed hemorrhoidal tissues: 3.15 ± 1.45 (1 - 5 hemorrhoidal tissues)

Surgical time: 34.0 ± 10.4 minutes (10 - 60 minutes).

- Surgical complications: There were 4 cases of postoperative bleeding, which were bloody fluid absorbent, being bandaged, using hemostatic drugs; no cases needed re-surgery.

- Immediate outcomes after surgery:

Table 1: Results after surgery.

Immediate outcome after surgery	Number of patients	Min	Max	Average
Average postoperative pain-free duration (day)	53	1	5	2.3 ± 0.7
Average length of hospital stay (days)	53	2	9	4.0 ± 1.6
Time of first defecation (days)	53	1	4	2.84 ± 0.9
Time to withdraw urinary catheter (day)	53	1	3	1.8 ± 0.8

Table 2: Degree of pain after surgery.

Postoperative pain level	Number of patients	Percentage (%)
No pain	0	0.0
Mild pain	5	9.4
Moderate pain	24	45.3
A lot of pain	12	22.6
Unbearable pain	12	22.6
Terrible pain	0	0.0
Total	53	100.0

Table 3: The correlation between classification on degree of hemorrhoids and treatment results.

Degrees of hemorrhoids	Treatment results			
	Good	Not good	Total (n, %)	
Grade III	29	0	29 (54.7)	p = 0.001
Grade IV	21	3	24 (45.3)	
Total	50	3	53 (100.0)	

Table 4: The correlation between complications of hemorrhoids and treatment results.

Complications of hemorrhoids	Treatment results			
	Good	Not good	Total (n, %)	
Blockage - necrosis	5	1	6 (11.3)	p = 0.012
Excessive bleeding	1	1	2 (3.8)	
Thrombosed hemorrhoids	2	0	2 (3.8)	
Anemia	9	1	10 (18.9)	
Infection	0	0	0 (0.0)	
No complications	33	0	33 (62.3)	

Table 5: The correlation between the technique of hemorrhoidectomy and treatment results.

Technique of hemorrhoidectomy		Treatment results			
		Good	Not good	Total (n, %)	
Means of hemorrhoidectomy	Electric knife	48	3	51 (94.4)	p = 0.73
	Scissors	2	0	2 (3.7)	
	Total	50 (92.6%)	3 (5.6%)	53(100.0)	
Means of treating the pedicle	Stitch	39	1	40 (75.5)	p = 0.08
	Ligasure knife	11	2	13 (24.5)	
	Total	50 (94.3%)	3 (5.7%)	53 (100.0)	

- Long-term outcomes after surgery:

Table 6: Long-term outcomes after surgery.

Long-term outcomes after surgery	Number of patients	Rate (%)	
Postoperative anal stenosis	1	1.9	
Excess skin anus	6	11.3	
Anal autonomy disorder after surgery	0	0.0	
Satisfaction with surgical outcomes	Good	52	98.1
	Average	1	1.9
	Bad	0	0.0

No patients with recurrent hemorrhoids during the period of research were recorded. Average time to return to normal work: 16.42 ± 7.56 days (10 - 30 days).

DISCUSSION

1. Surgical indication

Hemorrhoids grade III and IV requiring surgery accounted for 100%, of which hemorrhoids grade III accounted mainly with 54.7%. Since then, we have realized that the indication for surgery should be tight, especially the indication for surgery in cases where other methods have failed, such as hemorrhoids grade III or IV with complications. This result is consistent with the studies by Bui Sy Tuan Anh

(2011) [6], Nguyen Duc Trong (2018) [4], K. Vagholkar (2018) [7]. The research results show a statistically significant difference in treatment results between hemorrhoids grade III and IV, of which hemorrhoids grade III have better treatment results than hemorrhoids grade IV with p = 0.001.

Chronic hemorrhoids causing anemia is the most common complication among types of complications. In our study, complications of anemia accounted for

18.9%, of which the majority was mild anemia. Our research results show that the rate of anemia due to hemorrhoids has decreased a lot compared to studies 20 - 30 years ago such as Nguyen Manh Nham's study (1993), where moderate anemia accounted for 77.9% [5].

Complications of congestion and necrosis accounted for 11.3%; severe bleeding accounted for 3.8%; thrombosed hemorrhoids were 3.8%. The research shows that there is a statistically significant difference in treatment results among different complications, in which cases with no complications have the better treatment results than cases with complications.

- General features of the surgery:

The average number of removed tissues: 3.15 ± 1.45 tissues. For these cases, the large tissues will be removed by the Milligan - Morgan method, leaving a mucosal bridge between the removed tissues; if there is a large tissue behind the left mucosal bridges, it should be combined with recto annal repair and hemorrhoidal artery ligation. In our study, for circular hemorrhoids, it was possible to leave at least 1 mucosal bridge (removing ≥ 5 tissues), there were cases where we left 2 or 3 mucosal bridges. But not to narrow the anus, later on was always noticed.

Although all cases had good results, data analysis showed a statistically significant difference in treatment results among the number of removed hemorrhoidal tissues. The fewer the tissues were cut, the better the result would be.

Haemostasis stitching for pedicle with 2/0 safil accounted for 75.5%; removing the pedicle with a Ligasure knife accounted for 24.5%. Both devices can be used effectively, ensuring hemostasis. However, according to the analysis of the results, removing the pedicle with a Ligasure knife has advantages of the surgical time and pain level compared with the stitching of hemostasis. Through the analysis of data, there is a statistically significant difference in surgical time between different means of pedicle treatment. Removing the pedicle with a Ligasure knife has a faster operation time than stitching of hemostasis.

The average surgery time per case was 33.98 ± 10.397 minutes. Surgical time depends on many factors, such as the number of hemorrhoids, the more hemorrhoids, the longer the surgery.

- Immediate outcomes after surgery:

Postoperative pain is always the main concern of surgeons and affects the psychology of patients before surgery. To assess the patient's pain, we used the VAS pain scale (Visual. Analg. Scale) according to the pain scale using a similar shape method to eliminate the subjective factors of the patient as well as the physicians. In research results of pain severity, analgesics and duration of analgesic medication, we found that most of them had moderate pain, accounting for the majority of 45.3%; followed by severe pain and very severe pain accounting for 22.6%, less pain accounted for 9.4%. In the group removing hemorrhoids with a Ligasure knife, the pain level was less than that of the group having haemostasis stitching with only 2/0 safil.

We found that 92.5% of patients did not have early and late secondary bleeding after surgery, 7.5% of patients had extensive bandage bleeding after surgery and were managed to rest at the bed bandage, using hemostatic drugs, after a few hours, there was no bleeding, all 4 cases were hemorrhoids with many tissues. According to Simoglou (2014), there was no postoperative bleeding. However late postoperative bleeding was recorded at 1.6% [8].

In our study, most patients defecated about 48 hours after surgery, accounting for 86.8% and most of them were mould stools. Mould stools have an important value after hemorrhoidectomy, especially multi-tissue hemorrhoids, circular hemorrhoids, playing a role as a natural dilator for the anus, avoiding anal stenosis after surgery. According to Parks, if the patient does not show defecation on the fifth day after surgery, he/she is at higher risk of having atrophy of the anus [2].

This time was calculated from the time of surgery to the time of the hospital discharge. The study found that the majority of patients were hospitalized from 3 to 5 days after surgery, the average length of hospital stay was 4.0 ± 1.6 days.

- Long-term outcomes after surgery:

In our research, the autonomy function was expected before the surgery, 100% of this function was good after surgery. Our research results are consistent with research results by other authors such as Nguyen Manh Nham (1993), who performed Milligan - Morgan hemorrhoidectomy had 100% of good autonomy [5], Nguyen Duc Trong (2018) did not have patient losing

autonomy anus [4]; Watson A.J., Cook J. (2017) reported that the second degree of autonomic dysfunction was 3.5%.

We evaluated anal stenosis according to the criteria of the classification of stenosis by Watts J.M. In our research results, 98.1% of patients did not have postoperative anal stenosis; there was 1 case of mild anal stenosis. Before surgery, this patient was diagnosed with hemorrhoids with congestion - necrotic complications, after discharge, she had a follow-up examination and was diagnosed with mild stenosis and did not need an anal dilatation afterward. The study by Shalaby and A. Desoky showed the anal stenosis rate of 2% [3]; Nguyen Manh Nham (1993) recorded no cases of postoperative stenosis with the Milligan - Morgan method [5].

In our study, there were no cases of recurrent hemorrhoids, diarrhea, bowel control problem and bleeding defecation; 11.3% of patients had anal skin tags after surgery. Some reports on the long-term outcomes after hemorrhoidectomy are as follows: Longo method in the study by Ravo et al. revealed 2.3% of patient still had hemorrhoids [9]. Shalaby and Desoky found 1/95 cases of recurrence of hemorrhoids [10]. Milligan - Morgan method in Nguyen Dinh Hoi's study (2002) had a recurrence rate of hemorrhoids of 3% [1]. Anal skin tags were 11.3%, which is an unavoidable complication if cutting many hemorrhoids, circular hemorrhoids, and large hemorrhoids, it also shows the cautiousness of the surgeon because too much skin is cut, causing mucosa disorder which leads to anal moisture and stenosis after surgery.

CONCLUSION

The Milligan - Morgan hemorrhoidectomy is a relatively simple technique, with fewer complications, lower recurrence rate, less pain, and faster surgery time, so this surgery has been widely applied to many types of hemorrhoids. Indications are mainly applied to grade III and IV hemorrhoids, including some cases with complications such as anemia (18.9%), strangulation - necrosis (11.3%), moderate bleeding (3.8%), uncomplicated (62.3%). Surgery time was short (mean 34.0 ± 10.4 minutes), patients feel less pain after surgery, shorter hospital stay (average 4.0 ± 1.6 days). Long-term outcomes after surgery give a good result, namely the patient has almost completely reduced symptoms compared to before surgery. Good results reached 94.3%, average results accounted for 5.7%, and no poor results.

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