

## Original Research Article

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# A comparative study to evaluate milligan morgan hemorrhoidectomy versus pile suture method in management of haemorrhoids

Aditya\*, Kuldeep Raj, P. N. Agarwal, Md Abu Nasar

Department of General Surgery, SGT Medical College, Hospital & Research Institute, Haryana, India

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**\*Correspondence:**

Dr. Aditya,

E-mail: Aditya.gupta012@gmail.com

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## ABSTRACT

**Background:** A pile suture technique was described originally by the Farag in 1978 was better in terms of post-operative pain, bleeding, hospital stay and early return to work which are the distressing effects of conventional Milligan Morgan Hemorrhoidectomy which is well accepted surgical procedure for haemorrhoids. This study is designed to compare the pile suture and Milligan Morgan Hemorrhoidectomy.

**Methods:** After fulfilling the criteria, 60 patients were randomly allocated to the group A (Pile Suture [PS] n -30) and group B (Milligan Morgan Hemorrhoidectomy [MM] n – 30). The techniques were evaluated with respect to the operative time, pain scores, bleeding, hospital stay, return to work, and recurrence.

**Results:** The mean age of patients was 44.33 years and 42.77 years in the pile suture group and MM group respectively. Grade III or IV hemorrhoids were more common in men (i.e., 80% and 60% in the pile suture and MM group, respectively). The mean operative time was shorter in the PS 20.10 minutes versus 51.47 minutes in the MM group (P .001). The bleeding and pain scores were less in the PS. Mean hospital stay was 4 days and 6.6 days in the PS and MM group, respectively. The patients in the pile suture group returned to their routine activities earlier (i.e., within 7.33 days) as compared with 16.87 days in the MM group.

**Conclusions:** Therefore, pile suture method can be considered as less traumatic for the patients and method can be recommended as a safer alternative to Milligan Morgan haemorrhoidectomy.

**Keywords:** Farag-pile suture, Hemorrhoidopexy, Milligan morgan open hemorrhoidectomy, Mucopexy

## INTRODUCTION

Haemorrhoids are by far one of the commonest afflictions for surgeon consultations in the present times.<sup>1</sup> Worldwide, the overall prevalence of hemorrhoids in the general population is estimated to be 4.4%.<sup>2</sup> The management of haemorrhoids is multivariate out of which Milligan Morgan Open Hemorrhoidectomy is commonly used procedure but, it is associated with many complications such as prolonged post operative pain, increased hospital stay and increased time taken to return

to routine work.<sup>3</sup> The surgical technique for hemorrhoidectomy has been modified in an attempt to lessen postoperative complications and allow earlier patient discharge. Therefore less invasive techniques such as band ligation, injection, sclerotherapy, radiofrequency ablation and staplers hemorrhoidopexy were introduced.<sup>4-7</sup> These are less destructive but cost and availability outcast them too. In 1978 Farag introduced the pile suture technique for the treatment of hemorrhoids which he reported to give better clinical impact than the conventional ligation and

excision technique.<sup>8</sup> However, the functional outcome of this technique in comparison to the standard ligation excision has not yet been established in comparison to the standard ligation excision.

The present study was done to compare the two modalities namely pile suture and conventional Milligan Morgan haemorrhoidectomy in terms of imparting better outcome by comparing various parameters such as Pain in the post-operative period, Rate of recurrence, incidences of bleeding in the post-surgical stage, the stay duration and time is taken by the patient to resume regular daily routine.

## METHODS

This randomized prospective analytical study was conducted in the department of surgery from October 2018 to March 2020 at SGT Medical College, Hospital and Research Institute, Gurugram after clearance from the institutional ethics committee. The study included 60 adult patients of either sex with grade III or grade IV hemorrhoids, which were divided randomly using computer generated randomization sequence into two groups. Group A patient underwent conventional Milligan morgan hemorrhoidectomy and Group B patients underwent Pile Suture method with 30 patients in each group. Patients of other anorectal complaints, were excluded. Sample size was based on the previous OPD/IPD records of 3 years.

In pile suture method hemorrhoid is held with tissue force and pulled down in which three interrupted sutures, using vicryl 3-0 placed first at the base, second at the distal end and the third suture was placed between the two to occlude the superior hemorrhoidal vessel. Milligan Morgan hemorrhoidectomy was done by conventional ligation and excision technique. The patients were followed up till 6 months for the assessment of postoperative parameters-pain score, bleeding and recurrence.

### Statistical analysis

All data was entered into a spreadsheet (Excel, Microsoft corp.) and then transferred to statistical software, SPSS version 21 for data analysis. Chi square test was used to compare continuous variables and Mann Whitney test was used to compare medians.

## RESULTS

A total of 60 patients agreed to be a part of the study 30 in each group. The majority of the patients presented with bleeding and prolapse as their main complaint. Table 1 summarizes the patients' profile. The mean age in pile suture (44.33 years Vs 42.77 years in open) difference between the 2 groups was not statistically significant. Men were more commonly affected by grade III and IV hemorrhoids. The difference in the pattern of distribution

of grade of haemorrhoids among two group was not found significant. Constipation was found in 66.6% of patients in the pile suture group versus 80 % patients in the open group. The intraoperative and postoperative parameters evaluated in the 2 groups are presented in Table 2. The mean operative time was significantly less in the pile suture group (i.e., 20.10 minutes as compared with 51.47 minutes in the open group). The pain scores were significantly lower in the pile suture group. The hospital stay and absence from work or routine activities was shorter in the pile suture group.

**Table 1: Patient profile.**

	Pile Suture(%)	MM(%)
Mean age in years	44.33	42.77
<b>Sex</b>		
Male	80	60
Female	10	40
<b>Grading</b>		
Grade III	60	43.3
Grade IV	40	56.7
<b>Chief complaint</b>		
Bleeding	100	100
Prolapse	100	100
Constipation	66.6	80

**Table 2: Results.**

	Pile Suture %	MM %	p value
<b>Post op bleeding</b>			
1month	10	23.3	0.2
3month	3.3	0	
6month	6.6	3.3	0.2
<b>VAS Pain score</b>			
Day 1	5.7	8.73	<0.001
Day 3	5.	6	<0.001
Day 7	2.73	4.30	<0.001
Day 15	1.0	2.10	<0.001
Day 30	0.0	0.03	0.3
Day 90	0.0	0	
Day 180		0	Mean
time Return to Work(days)	7.33	16.8	<0.001
Mean Operative Time(mins)	20.10	51.47	<0.001
Duration of hospital stays (days)	4	6.6	<0.001
<b>Recurrence</b>			
Up to 6 month	5	1.7	1.0

## DISCUSSION

Overall mean age group among patients undergoing surgical treatment of hemorrhoids was found to be  $44.3 \pm 15.2$  years.

In Milligan Morgan hemorrhoidectomy group, mean the age was  $42.77 \pm 14.77$  years while in pile suture method, patients presented at mean the age of  $44.33 \pm 17.21$  years. The difference in mean age of presentation could be different in different studies and it is attributed to the dietary habits and lifestyle of the study population and may be variable, depending upon the geographical location chosen for the study.

In the present study, the maximum numbers of patients were males 42 with only 18 females. The male to female ratio was 7:3. Other studies conducted by Elshazly et al and Saxena et al also showed male predominance.<sup>9,10</sup> In the present study mean operating time in Milligan Morgan hemorrhoidectomy was  $51.47 \pm 8.16$  minutes and in Pile suture group, it was  $20.10 \pm 5.64$  minutes. There was a significant reduction in the mean operating time ( $p$ - value =  $<0.001$ ). The mean operating time in the other studies was variable but pile suture method was invariably associated with less time. The variation in the mean operating time is attributable to the skills of the surgeon, the number of haemorrhoids operated and associated intraoperative complications. In the present study, postoperative pain was assessed with the help of Visual Analog Score. Mean VAS score on Day 1 in Milligan Morgan group was  $8.73 \pm 0.98$  while in Pile suture group, it was  $5.7 \pm 1.37$ . The mean VAS score was significantly greater in the Milligan Morgan group ( $p = <0.01$ ). The Difference in mean VAS score was statistically significant till day-15. In the study conducted by Elshazly et al, the mean VAS score was significantly higher till day-30 in Milligan Morgan group.<sup>9</sup> In a study by Jassim mohammed showed less post-operative pain in PS method.<sup>11</sup>

The low pain score associated with pile ligation can be explained by the placement of sutures in the non-sensitive anal mucosa above the dentate line, whereas in open hemorrhoidectomy pain attributable to thermal effect of diathermy, presence of wounds in the sensitive anal mucosa, more anal spasm and aggravated by defecation. The present study shows mean post-operative hospital stay of  $6.67 \pm 1.03$  days in Milligan Morgan group whereas it was significantly lower in Pile suture group  $4.0 \pm 0.83$  days ( $p$  value =  $<0.001$ ).

Dubey et al reported mean hospital stay of 4 to 5 days in Milligan Morgan group and 3-4 days in pile suture group.<sup>12</sup> In study by Hussein et al mean hospital stay in days were 7.4 days in case of Milligan Morgan group and 3.5 days in case of pile suture method.<sup>13</sup> In the present study, the mean time to return to work in Milligan Morgan was  $16.78 \pm 2.37$  days and  $7.33 \pm 1.12$  days in Pile suture group. Elshazly et al reported time to return to work  $23.5 \pm 10.8$  days in Milligan Morgan group and  $12.5 \pm 5.4$  days in pile suture group.<sup>9</sup> Hussein et al reported mean time to return to work 22.3 days in Milligan Morgan and 8.3 days in pile suture group.<sup>13</sup> Thus it is observed that patients undergoing pile suture ligation were able to return to work earlier than Milligan

Morgan hemorrhoidectomy group. Most common postoperative complication observed post haemorrhoidectomy is bleeding. In the present study, maximum postoperative bleeding was observed within the first month of surgery irrespective of the method of surgery. However, Milligan Morgan was associated with more number of patients reporting postoperative bleeding (23.3%) whereas only 10% reported bleeding in pile suture group within the first month of surgery. 2 patients (6.6%) reported bleeding within 3-6 months in pile suture group whereas only one patient reported bleeding within 3-6 months in Milligan Morgan group, which is associated with recurrence. In the study carried out by Elshazly et al, only 8 patients reported postoperative bleeding in Milligan Morgan group while only 3 patients reported bleeding in pile suture group.<sup>9</sup> Prasad et al reported postoperative bleeding in their study in 12 patients of Milligan Morgan group and only 5 patients in pile suture group.<sup>14</sup> The study conducted by Dubey et al showed maximum postoperative bleeding in 14.4% patients in Milligan Morgan group while in pile suture group 9.6% patients had postoperative bleeding.<sup>12</sup> Hussein et al reported more cases of postoperative bleeding in Milligan Morgan group as compared to Pile suture group.<sup>13</sup> Study conducted by Rehman et al also showed no exception.<sup>15</sup> Of all the 60 patients included in the study, none of the patients reported recurrence within the first month. Only 1 patient reported recurrence in Pile suture group at 3 months. At 6 months, 1 patient presented with recurrence in Milligan Morgan group and 2 patients in Pile suture group. Elshazly et al also reported higher recurrence in pile suture group as compared to Milligan Morgan.<sup>9</sup> Higher recurrence is seen in pile suture group because of development of collaterals or inadequate suture bite or initial learning curve. However, Prasad et al reported only 2 patients of long term recurrence in pile suture group but 12 patients in Milligan Morgan group.<sup>14</sup> They had ligated the vessel which helps to prevent the recurrence in pile suture.

This study has several limitations. Our study mainly comprised of population coming from a limited demographic area conducted in a single centre with a small sample size. There is a need for a multicentric study covering larger population of different demographic area. Low adherence was a major limitation of study. It may be attributed to location of institute, long commute to hospital, inadequate support from family members and financial burden.

## CONCLUSION

In conclusion, we can say that pile suture is a simple, safe, and effective method for treatment of hemorrhoids. It is less invasive, faster technique, causing less postoperative pain, with early return to routine work. Hence recommended safer alternative to Milligan Morgan hemorrhoidectomy.

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