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Original Research Article

A comparative study of open (Milligan-Morgan) versus closed (Ferguson) haemorrhoidectomy with and without internal sphincterotomy

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ABSTRACT

Background: Normal anal canal contains cushion of submucosa with vascular tissues. When cushions become abnormal , cause symptoms. This clinical condition is known as haemorrhoids. Haemorrhoidectomy is surgery for haemorrhoids, which can be performed by Milligan-Morgan (open technique) or Ferguson (close technique) methods. This study is conducted to compare different surgical modalities of treatment for haemorrhoids.
Methods: In total, 232 patients suffering from haemorrhoids with or without fissures were included in the study. Patients were categorized into two groups. Patients undergoing open technique were designated as open group, similarly patients undergoing close technique were designated as close group. In both groups for few patients internal sphincterotomy (I.S.) was performed. Post-operative pain was assessed by visual analogue scale in all groups, per operative haemorrhage was assessed by number of swabs used during surgery and VAS estimation, operating time and post-operative hospital stay were recorded.
Results: 136 patients were suffering from haemorrhoids with fissures. Of these 84 patients were operated by open technique and 52 patients by close technique. In all 136 patients, internal sphincterotomy was performed. Remaining 96 patients were suffering from only haemorrhoids. Of these 30 patients were treated by open technique with I.S., 30 patients were treated by close technique only. 25 patients were treated by close technique with I.S. and 10 patients were treated by close technique without I.S. Close group and open group with I.S. experienced less pain compared to without I.S. in both groups. Per operative haemorrhage and hospital stay in close group was less . Operative time in open group was less compared to close group.
Conclusions: Ferguson procedure is found to cause less post-operative discomfort. Addition of internal sphincterotomy is having a positive effect in reducing post-operative pain.

Keywords: Ferguson-closed haemorrhoidectomy, Internal sphincterotomy, Milligan-Morgan open haemorrhoidectomy

INTRODUCTION

Normal anal canal contains cushions of submucosa with vascular tissue. They are located in left lateral, right anterior and right posterior quadrants of the canal to aid in anal continence, when these cushions become abnormal, cause symptoms. This clinical condition is known as haemorrhoids.[1] Hemorrhoids can be internal or external. External haemorrhoids are distal to dentate line and are covered with anoderm, these may be periodically

engorged causing pain. Thrombosis of external haemorrhoids result in severe pain. Internal haemorrhoids are characterized by bright red pain less bleeding or prolapse. Internal haemorrhoids are stratified in to four grades.

Haemorrhoids and acute fissure occur when strain to move stool and this causes the veins in tissue inside anus to swell and tear. Both causes painful bowel movement, itching, burning and bleeding.[1] the indication for haemorrhoidectomy includes third and fourth degree haemorrhoids, second degree haemorrhoids that have not been cured by non-operative treatment, fibrosed haemorrhoids, intern-external haemorrhoids when external haemorrhoids is well defined and the other strong indication for surgery is haemorrhoidal bleeding sufficient to cause anemia.

Haemorrhoidectomy can be performed using an open-Milligan-Morgan or close-Ferguson technique. Both involve ligation and excision of haemorrhoids. In Milligan and Morgan technique the anal mucosa and skin are left open to heal by secondary intention but in close technique the wound is sutured.[2] The aims and objectives were that haemorrhoids is a common disease. Haemorrhoidectomy can be done by two methods: open-Milligan and Morgan or close-ferguson methods. Most of the patients want less hospital stay and early return to work. Keeping this criterion in mind, present study was conducted to compare the different treatment modalities enabling to give best patient care.

The observation was done for operating time, per-operative haemorrhage, post-operative pain, healing of wound, hospital stay and return to work.

METHODS

This study was conducted at MNR Medical College and Hospital between March 2015 to February 2018. Study included 232 patients.

The patients suffering with haemorrhoids of grades second to fourth with or without fissure were operated in the Department of General Surgery and were followed up for six months. The patients suffering with haemorrhoids with or without fissure where surgery was indicated were included and the patients with recurrence, fistula in anoderm and other co-morbid condition were excluded from this study.

All the patients were worked up before surgery. Preoperative anaesthesia assessment was done and informed consent was taken. All patients were admitted, enema was given two times before surgery, in night and in morning on the day of surgery. Pre-operative antibiotic was started. Patients were operated under spinal or general anaesthesia in lithotomy position. Suture material used was chromic Catgut no. 1 or Vicryl 1-0 and vicryl 2-0. No anal packing was done for patients undergoing close technique and in few patients undergoing open technique. Anal packing was done for most of patients undergoing open technique, which was removed after 6hrs. All patients were given Injection Diclofenac or Tramadol and Paracetamol routinely on first post-operative day. From the second post-operative day, injectable analgesic was given only to the patients who complained severe pain.

Anal pack was removed after six hours and checked for hemorrhage. Dressing was changed after 24 to 48hours. After close haemorrhoidectomy patients were discharged earlier with advice for sitz bath and application of soframycin ointment, whereas after open haemorrhoidectomy dressing was done and patients were discharged with advice for sitz bath, dressings oral antibiotics and analgesics.

RESULTS

In total, 232 patients suffering from haemorrhoids with or without fissures were included in the study. Of these, 136 patients had haemorrhoids with fissures and remaining 96 were suffering from haemorrhoids. Age and sex distribution are reflected in Table 1.

Table 1: Age and sex wise distribution of study population.

Age group	Male pts	Female pts
20-30	15	7
30-40	28	26
40 -50	32	32
50-60	35	23
60-70	15	10
70-80	6	3

Total: 131 (56.4%) +101 (43.6%) =232.

Of 136 patients suffering with haemorrhoids with fissures, 84 patients underwent open technique haemorrhoidectomy with lateral internal sphincterotomy and remaining 52 patients underwent close technique haemorrhoidectomy with lateral internal sphincterotomy. Thus, lateral internal sphincterotomy was performed for all 136 patients as reflected in Table 2.

Table 2: Haemorrhoids with fissures and technique of haemorrhoidectomy.

Total	Open tech with sphincterotomy	Close tech with Sphincterotomy
136	84	52

Remaining 96 patients were suffering from haemorrhoids only. Of these 96 patients, 30 patients underwent open technique haemorrhoidectomy with lateral internal sphincterotomy (IS). 31 were treated by open technique. 25 patients were treated by close technique with lateral

internal sphincterotomy (IS). 10 patients were treated by close technique only (Table 3).

Table 3: Only haemorrhoids and technique of haemorrhoidectomy.

Total	Open tech with I.S.	Open tech only	Close tech with I.S.	Close tech only
96	30	31	25	10

Patients were categorized in two groups- Pts undergoing open technique were designated as open group and Pts undergoing close technique were designated as close group.

Patients in both the gps were compared for severity of post-operative pain, haemorrhage during surgery, duration of hospital stay, post-operative dressings and follow-up.

Severity of post-operative pain was evaluated by VAS-Visual Analogue Scoring at 0-10 scale at 24hrs, 48hrs and further. The VAS was then interpreted as 0=no pain, 1-3 mild pain, 4-6 moderate pain, >6 severe pain, as reflected in Table 4.

Table 4: Visual analogue score (VAS) for pain at 0-10.

0	1-3	4-6	>6
No pain	Mild pain	Moderate pain	Severe pain

Total 232 patients included in study. There were 131 (56.4%) male and 101 (43.6%) females. Male to female ratio was 1.3:1. The total severity of pain at different intervals are demonstrated in Tables 5.

Table 5: Severity of pain in close group with I.S. n=77.

Time interval	No pain	Mild pain	Severe pain
24hrs	37 (48%)	33 (43%)	07 (9%)
48hrs	55 (71%)	20 (26%)	02(3%)
72hrs	60 (78%)	17 (22%)	-

Table 6: Severity of pain in close group with I.S. n=10.

Time interval	No pain	Mild pain	Severe pain
24hrs	04 (40%)	04 (40%)	2 (20%)
48hrs	7 (70%)	2 (20%)	1 (10%)
72hrs	8 (80%)	2 (20%)	-

Table 7: Severity of pain in close group without I.S. n=10.

Time interval	No pain	Mild pain	Severe pain
24hrs	34 (30%)	31 (27%)	49 (43%)
48hrs	52 (46%)	37 (32%)	25 (22%)
72hrs	76 (67%)	20 (18%)	18 (15%)

Table 8: Severity of pain in close group without I.S. n=31.

Time interval	No pain	Mild pain	Severe pain
24hrs	-	06 (19%)	25 (81%)
48hrs	05 (16%)	12 (39%)	14 (45%)
72hrs	16 (52%)	09 (29%)	06 (19%)

Per-operative haemorrhage was assessed by number of swabs used during surgery. Scoring was done by VAS estimation as 100-130ml 1n 30x30cm swabs and 160-200ml in 45x45cm swabs.[3] Total no. of patients who underwent close haemorrhoidectomy are 87. Per operative bleed was minimal in this gp whereas 145 pts who underwent open method haemorrhage was more.

Operating time in open haemorrhoidectomy was 20-28minutes with average of 22minutes and that of close haemorrhoidectomy was 20-35minutes with average if 25minutes. Most of the patients in close gp were discharged earlier. As reflected in Table 9.

Table 9: Operation technique and hospital stay.

Technique	Discharged after 48hrs	Discharged after 3-5days	Discharged after 5-7day
Close tech.	54 pts	28 pts	5 pts.
Open	0 pts.	56 pts.	89 pts.

DISCUSSION

Present study reflect that maximum number of male patients presented with haemorrhoids were in the age group of 50-60years and females in the age group of 40-50years whereas Borse H et al, found more number of patients presented with haemorrhoids in the age group of 31-40years, further they postulated that earlier presentation in their study may be due to local dietary habits and life style.[4] In another study conducted by Mohapatra R et al, reveal number of patients presented with haemorrhoids were in the age group of 31-50 years, which is nearly compatible with this study.[5]

In present study, 56.4% were males and 43.6% were females. Higher percentage of patients were males though haemorrhoids are common in females, giving an indication the ailment remains under diagnosed in females. The result of present study correlate with other studies.[4,6] In the present study, majority of patients were from rural area with agriculture as main occupation. The main reason of disease remaining undetected in females from rural areas is inherent shy nature to approach a male surgeon. In present era many female medical graduates are opting to do post-graduation in general surgery and in future society may overcome this issue leading to early detection and prompt treatment of female patients.

The present study covers open group with and without internal sphincterotomy and close group with and without

internal sphincterotomy. Scanty literature is available discussing all the aforementioned techniques together. This study reveals performing internal sphincterotomy in both groups, pain is significantly reduced, which contributes to early recovery.

In the present study, pain was assessed at different intervals of time and analysis of study is as follows:

Close group with internal sphincterotomy is most superior in alleviating pain post operatively. Close group without internal sphincterotomy is better than open group without internal sphincterotomy in alleviating pain. This observation is in correlation with study conducted by Borse H et al, in contrast Mohapatra R et al, did not find close method has advantage in post-operative pain reduction.[4,5]

Pain is less post operatively in open group with internal sphincterotomy compared to open group without internal sphincterotomy. Haemorrhoidectomy with internal sphincterotomy reduces pain because of relaxation of internal sphincter.[7]

This finding corroborates with the study conducted by Raza MW et al, finding of the present study differ from results of Khubchandani IT, who found no difference in post-operative pain relief in open group with internal sphincterotomy and without internal sphincterotomy.[8,9]

In present study, operating time in open haemorrhoidectomy is shorter when compared to close group. This is in correlation with the study conducted by Jasim HI et al, further their study revealed that healing time was short in closed group compared to open group, which is compatible with this study.[6]

In present study, patients operated by close technique were discharged earlier when compared to patients operated by open technique. This is in correlation with study conducted by Borse H et al, Mohapatra R et al, Jasim HI et al.[4-6]

In present study, per-operative haemorrhage was less in close group than in open group. This is in correlation with the findings of Borse H et al.[4]

In this study no patient developed incontinence and anal stenoses. This in line with study conducted by Harish S et al, closed haemorrhoidectomy is most popular.[10,11]

CONCLUSION

Both operative procedures i.e. close technique and open technique are safe and lead to satisfactory results. However, Ferguson procedure is found to cause less post-operative distress, reduced hospital stays and early return to work as healing is faster. The addition of lateral Internal sphincterotomy to both the techniques seems to have a positive effect on reducing the post-operative pain.

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REFERENCES

1. Heidi Nelson. Anus. In: Sabiston Text Book of Surgery: The biological bases of modern surgical practice, 19th ed. Philadelphia; 2014:1387-1391.
2. Williams, Norman S. The anus and anal canal. In: Bailey and Love's Short Practice of Surgery. 27th Ed. Boca Raton: FL; 2018:1354-1361.
3. Ponniah NE, Eipe N. Perioperative blood loss assessment-how accurate. Ind J Anaes. 2006:36.
4. Borse H, Dhake S. A comparative study of open (Milligan-Morgan) versus closed (Ferguson) hemorrhoidectomy. MVP J Med Sci. 2016;3:7-10.
5. Mohapatra R, Murmu D, Mohanty A. A comparative study of open and closed hemorrhoidectomy. Inter Surg J. 2018;5(6):2332-5.
6. Jasim HI, Al-Alwa MH. Haemorrhoidectomy: a comparative study of open and closed methods. Mustansiriya Med J. 2018;8(1):23-6.
7. Eisenhammer S. Internal anal sphincterotomy plus free dilatation versus anal stretch with special criticism of the anal stretch procedure for hemorrhoids: The recommended modern approach to hemorrhoid treatment. Dis Colon Rectum. 1974;17(4):493-522.
8. Raza MW. Haemorrhoidectomy with and without lateral internal sphinterotomy. J Rawalpindi Med Coll. 2013;17(2):189-91.
9. Khubchandani IT. Internal sphincterotomy with hemorrhoidectomy does not relieve pain. Dis Colon Rectum. 2002;45(11):1452-7.
10. Harish S, Sringeri RR, Ajay G. Routine internal sphincterotomy with hemorrhoidectomy: a prospective study. Inter J Sci Study. 2016;3(11):182-8.
11. Ferguson JA, Heaton JR. Closed hemorrhoidectomy. Dis Colon Rectum. 1959;2(2):176-9.

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