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Hemorrhoidectomy: Open versus Closed: A Randomised Trial

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Abstract

Aims and objectives: 1. To evaluate the outcomes of open and closed hemorrhoidectomy. 2. To compare the advantages and disadvantages in open and closed hemorrhoidectomy.

Methodology: A randomised control trail was conducted on 56 patients presenting with grade 3 or grade 4 haemorrhoids at tertiary care centre. Patients were divided into groups of Group A – undergoing Open haemorrhoidectomy and Group B – undergoing Closed haemorrhoidectomy. Each group consisted of 28 patients. Patients in both groups were followed up and various parameters were assessed.

Results: Mean duration of procedure for open haemorrhoidectomy was 22.32 minutes and for closed haemorrhoidectomy was 30 minutes. Mean intraoperative blood loss in both the procedures was 23.39 ml. 64.28% of patients showed wound healing at 3 weeks in group A and 46.42% in group B. Mean VAS score at discharge was 3.71 for group A and 4.64 for group B ($p < 0.001$). Mean hospital stay for group A – 3.7 and for group B – 5 ($p < 0.001$).

Conclusion: As per the observations made and data obtained in our study it showed that open haemorrhoidectomy to be superior to closed haemorrhoidectomy.

Keywords: Haemorrhoids; Milligan Morgan Open hemorrhoidectomy; Ferguson Closed haemorrhoidectomy; Post-operative pain; Wound healing; Post-operative blood loss.

INTRODUCTION

Hemorrhoids is one of the common anorectal disorders encountered in surgical OPD (out patient department). Hemorrhoidal disease is still a common problem in 5% of general population and 50% of individual over 50 years of age.[1]

The term "Haemorrhoid" is derived from the Greek adjective meaning bleeding (haema - blood, rhoos-flowing).[2] The term "PILE" derived from Latin word 'PILA' meaning pill or ball.[2] Italians refer the disease as "Profluvio di Sangue" suggesting an

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overflow of blood and implying such overflow may be beneficial.[3]

Different modalities dealing with non-complicated haemorrhoids such as medical therapy, rubber band ligation, sclerotherapy, and cryotherapy[1] are available. In late hemorrhoidal disease surgical procedures are necessary to provide satisfactory long-term relief.[4] Of various surgical procedures available, open, and closed haemorrhoidectomy are the two procedures chosen to be compared with various parameters in our study. In closed haemorrhoidectomy (Ferguson), the hemorrhoidal mass is excised together with overlying mucosa.[5] Open haemorrhoidectomy (Milligan-Morgan) involves excision of hemorrhoidal tissue which includes external skin component of hemorrhoidal complex in continuity with a strip of anal canal mucosa and underlying hemorrhoidal plexus.[6]

Although various studies are available comparing the two procedures, the results obtained are conflicting in terms of post-operative complications and patient compliance. Hence, we are conducting the study to compare various parameters and outcomes of open and closed haemorrhoidectomy.

AIMS AND OBJECTIVES

56 cases of grade 3 and grade 4 haemorrhoids presenting to tertiary care centre underwent surgical procedure and studied

1. To evaluate the outcomes of open and closed haemorrhoidectomy.
2. To compare the advantages and disadvantages in open and closed haemorrhoidectomy

Inclusion criteria:

1. Patient willing to give informed consent
2. Patient above 18 years of age
3. Patient with clinically evident grade 3 and grade 4 haemorrhoids

Exclusion criteria:

1. Patient not willing to give informed consent
2. Patients with coexisting anal diseases
3. Patients with secondary haemorrhoids due to intraabdominal pathology

METHODOLOGY

Patients were divided into group A and group B. Patients in group A underwent open haemorrhoidectomy (Fig. 1) and group B underwent closed haemorrhoidectomy (Fig. 2). Spinal anaesthesia was administered during both the procedures. Common analgesics and similar medications were administered in post-operative period.

The two group were assessed post-operatively

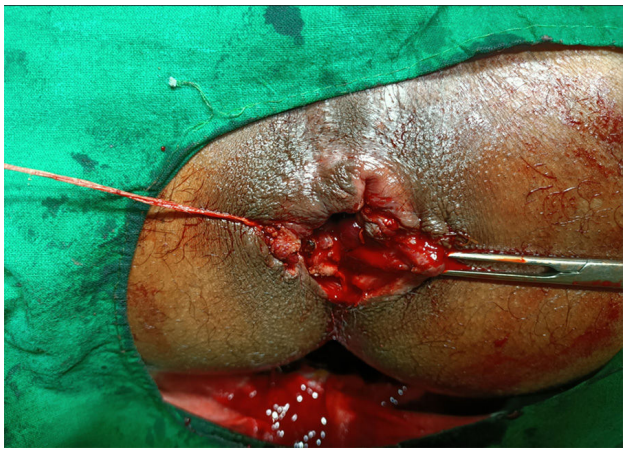


Fig. 1: Open Haemorrhoidectomy



Fig. 2: Closed hemorroidectomy

with following variables:

a. Pain: assessed using Visual analogue scale (VAS)
b. Wound healing time: <3weeks versus >3weeks
c. Complications: bleeding, wound infection
d. Duration of stay in hospital

Outcome measures

1. Blood loss in millilitre

2. Duration of surgical procedure in minutes
3. Post-operative pain according to visual analogue scale
4. Mean duration of hospital stays in days
5. Mean healing time in days
6. Wound infection

RESULTS

Duration of procedure was found to be slightly higher in closed hemorrhoidectomy group 30 ± 7.07 as compared to open hemorrhoidectomy group 22.32 ± 6.73.

Blood loss was found to be equal in both the groups 23.39 ml. Independent sample t test showed no statistically significant difference between the groups (p=0.1.00).

Post-op bleeding was found to be higher in open groups at all the time intervals day 1(14.64 ± 5.6), 1st week (4.25 ± 2.47), 3rd week (1.21 ± 1.03). Independent sample T test showed statistically significant difference between the groups at day 1 (p=0.00), 1st week (p=0.001) whereas no statistically significant difference was seen at 3rd week (p=0.053). (Fig. 3)

Wound healing was seen in 64.28% of patients

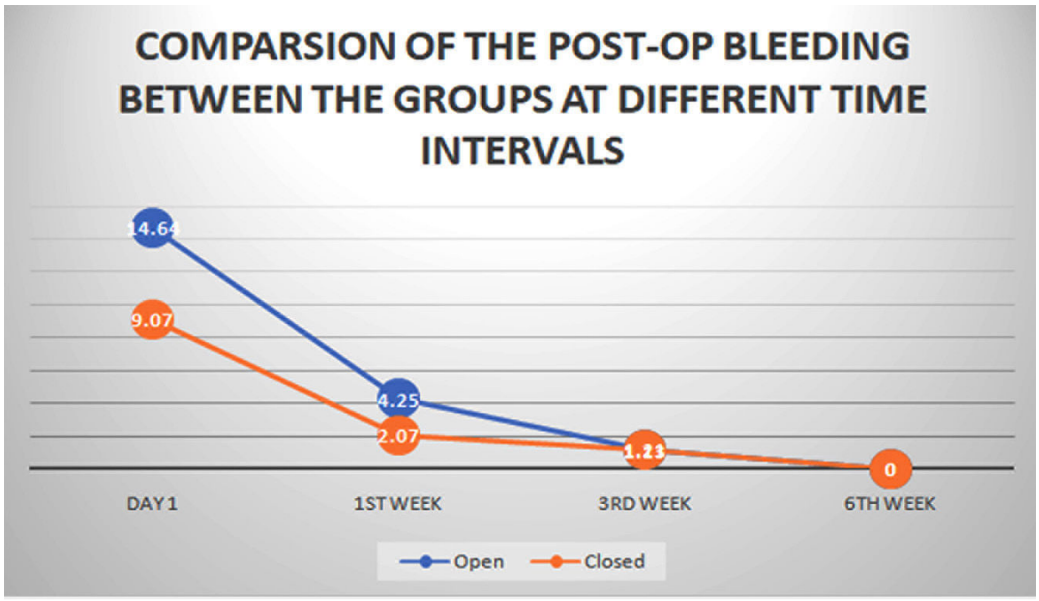


Fig. 3: Comparsion of the post-op bleeding between the groups at different time intervals using independent sample T test.

and 46.42 % of patients in open and closed group respectively at 3rd week. At 6weeks wound healing was seen in all patients in both groups.(Fig.4)

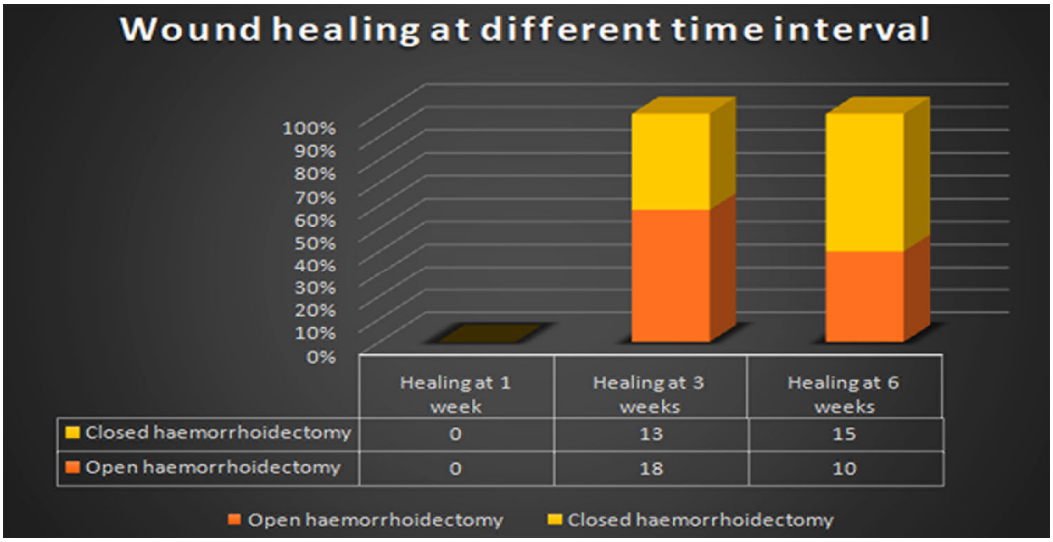


Fig. 4: Comparsion of Wound Healing in Different time Intervals

VAS scores were found to be higher in closed groups at all the time intervals immediate pain (6.71± 0.85), at discharge (4.64 ± 1.03), 1st week (2.04 ± 1.14). and at 3rd week (0.75 ± 0.7). Independent sample T test showed statistically significant difference between the groups at immediate post -operative period, at discharge, 1st week ($p \leq 0.01$). But the VAS score at 3rd week was not statistically significant. (Fig. 5)

Post op hospital stay was found to be higher in closed haemorrhoids group- 5 ± 1.15 as compared to open haemorrhoids group- 3.7 ± 1.18. Independent sample T test was applied to compare the post op stay between the groups. Independent sample t test showed statistically significant difference between the groups (p=0.00) with respect to post op stay.

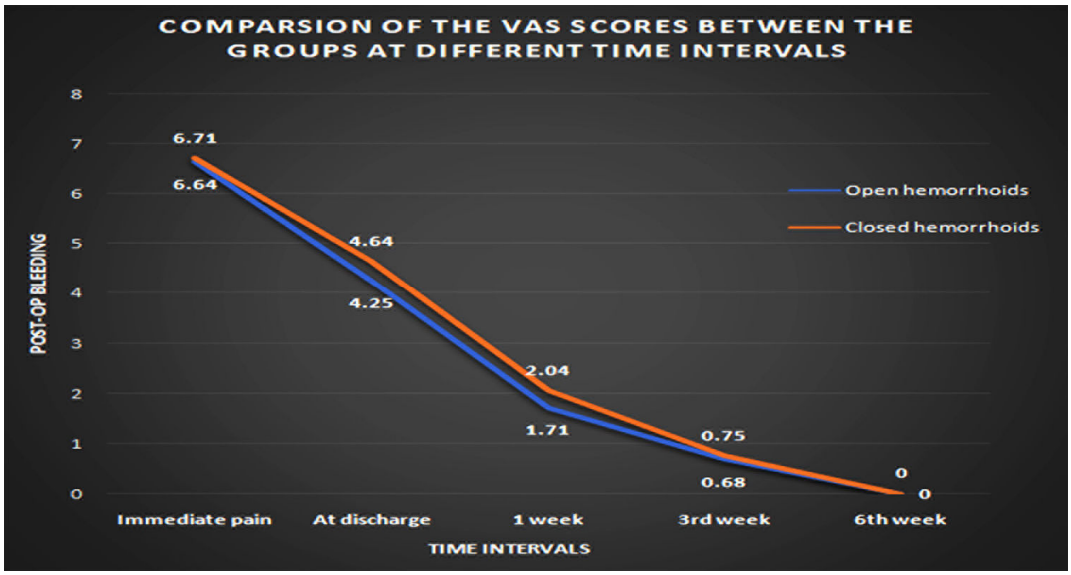


Fig. 5: Comparsion of the Vas Scores between the Groups at Different Time Intervals

DISCUSSION

Egyptian papyrus from 1700 BCE advices "Thou should give recipe, an ointment of great protection; acacia leaves, ground, titurated and cooked together. Smear a strip of fine linen there with and place in the anus, that he recovers immediately".[7] During medieval era, haemorrhoids were known as Saint Fiacre's curse after a sixth century who developed them following tilling the soil.[8]

In the study conducted by Mukesh Kumar et al.[9] showed that the operative timing was shorter in open group compared to closed group. In our study similar results were obtained.

Blood loss during the procedure was equal in both open and closed haemorrhoidectomy. However, in post-operative period blood loss was higher in open group compared to patients undergoing closed haemorrhoidectomy at post-op day 1, 1st week and 3rd week.

Muhbat Ali et al [10] conducted a study on 360 patients and concluded that wound healing was faster in closed haemorrhoidectomy patients compared with open haemorrhoidectomy. In contrary our study showed wound healing to be faster in open haemorrhoidectomy group. However, on analysis the result was not statistically significant.

Post-operative pain was significantly higher in closed haemorrhoidectomy patients when compared to open haemorrhoidectomy group. Study conducted by Raghunath Mohapatra et al[11] also concluded that post-operative pain was significantly lower in open haemorrhoidectomy group.

Further it was seen that length of stay in hospital was higher for patients undergoing closed haemorrhoidectomy.

Maximum wound healing was seen in open haemorrhoidectomy group at 3rd weeks compared with closed haemorrhoidectomy group at 6th weeks. Complete wound healing of all subjects were noted in both groups. Closed haemorrhoidectomy required more duration for healing. Also, there was no surgical site infection observed in both the procedures at the end of 6th weeks.

CONCLUSION

Various treatment modalities are available for treating haemorrhoids. Out of various surgical

option we compared between open and closed haemorrhoidectomy and the following observations were made:

- Duration of the procedure was shorter for open haemorrhoidectomy compared to closed haemorrhoidectomy.
- There was no difference in intraoperative blood loss between both the procedures. However, post-operative blood loss at day 1 and 1st week was significantly lower after closed haemorrhoidectomy.
- Duration required for wound healing was less in open haemorrhoidectomy with maximum healing at the end of 3th weeks.
- Wound healing of all patients in both groups were completed at the end of 6th weeks.
- Open haemorrhoidectomy was superior to closed haemorrhoidectomy with respect to post-operative pain score. Open haemorrhoidectomy was associated with significantly less VAS scores.
- Post-operative hospital stay was less in open haemorrhoidectomy group.
- No surgical site infection was observed in both groups during the follow up period.

Based on above observations it can be concluded that open haemorrhoidectomy is superior to closed haemorrhoidectomy for grade 3 and grade 4 haemorrhoids with short duration of procedure, lower post-operative pain, lesser hospital stay and early wound healing.

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