ORIGINAL ARTICLE

Evaluation of various Post-operative factors among Open vs Close hemorrhoidectomy in local population

Umair-ul-Islam, Ata Ur Rehman, Tehreem Aslam, Syed Owais Hussaini, Syed Muhammad Hameez Qadri, Lama Qadri, Fareya Usmani

Abstract:

Background and Objectives: Hemorrhoids are thought to be the most prevalent cause of rectal bleeding, with 50% of the population having them by the age of 50 years. The surgery to remove widespread or severe internal or external hemorrhoids is known as a Hemorrhoidectomy. There are various techniques for hemorrhoidectomy, most common are Open (Milligan Morgan) and Close (Ferguson). In an open hemorrhoidectomy, the incision is left open to heal by secondary intention whereas, in close hemorrhoidectomy the incision is closed. However, hemorrhoidal tissues are removed in the same way as in both the techniques.

Material and Methods: The patients with second and third degree of hemorrhoids were enrolled in this study, and were divided into two groups by envelope technique. Patients in Group A (n-50) underwent open hemorrhoidectomy while patients of closed hemorrhoidectomy were placed in Group B (n-50).

Results: The age ranged from 18 years to 70 years. In Group A, the duration of symptoms were 8.3 months while 10.4 months in Group B. Post-operative hospital stay, average return to work and wound infection, as defined and reported by patients was significantly to a greater extent in Group B, compared to Group A. The post-operative pain was assessed using VAS score which was lower in open hemorrhoidectomy (Group A) compared to closed hemorrhoidectomy (Group B). Post-operative bleeding was significantly less in Group B in comparison with Group A.

Conclusion: According to the results of our study, close hemorrhoidectomy offers a better alternative in terms of a speedy return to work and minimal risk of post-operative bleeding. When it comes to fewer chances of wound infection and longer post-operative hospital stays, open hemorrhoidectomy is a superior option. Though further research is needed to support the superiority of open technique versus close and vice versa.

Received
date: 16th September, 2024
Accepted
date: 15th October, 2024

Keywords: Hemorrhoids, Open Hemorrhoidectomy, Close Hemorrhoidectomy, post-operative hospital stay, Post-operative bleeding

Institute of Kidney Diseases, Peshawar
Uul Islam
AUr Rehman
Tehreem Aslam
SO Hussaini
SMH Qadri
F Usmani

Correspondence:
Dr. Abdul Haseeb
Post Graduate Resident, Department of Urology, Institute of Kidney Diseases, Peshawar.
email: ahaseeb.dr@gmail.com

Introduction:

Hemorrhoids, also known as piles, are swollen veins in the lower part of the rectum or anus. They can be internal, located inside the rectum, or external, located under the skin around the anus. Hemorrhoids can develop when the veins in the rectal area are put under pressure or strain, such as during bowel movements, pregnancy, or prolonged sitting. Treatment options for hemorrhoids may include lifestyle changes such as increasing fiber intake and drinking more water, as well as medication and surgery in severe cases. It has been estimated that 50% of the population has hemorrhoids by the age of 50 years[1] and these are supposed to be the commonest cause of rectal bleeding.[2] Both males and females are affected by hemorrhoids. They are more common in old age, but young patients can also be affected. The disease burden of hemorrhoids can vary depending on the severity of the condi-

tion, and the individuals overall health in some cases, hemorrhoids may only cause mild symptoms and require minimal treatment. However, in more severe cases hemorrhoids may cause significant pain and bleeding, and may require more aggressive treatment, including surgery.

Hemorrhoidectomy can be performed by various techniques including Open (Milligan Morgan) and Close (Ferguson) with numerous outcomes have been reported with controversy still existing as to which of the techniques has an edge over the other.

Closed hemorrhoidectomy is the one in which the excision of the hemorrhoids is followed by primary suturing of mucosa and the skin edges. The method is commonly used in USA. This method is stated to be better regarding post-operative pain, healing time, early return to work and other post-operative complication[3-5] like bleeding, infection, urinary and fecal incontinence and anal stenosis.

Open hemorrhoidectomy is traditional treatment of hemorrhoids is widely practice in UK. In this technique hemorrhoidal tissue is excised and wound is left open to heal by secondary intention.

Our study was undertaken to assess the effectiveness of two techniques of hemorrhoidectomy in terms of post-operative pain, discharge, healing time and early return to work and wound infection in our local population.

Material and Methods:
This prospective study was conducted at Creek General Hospital, after taking permission from the ethical committee from January 2021 to December 2022.

The patients with second and third degree of hemorrhoids were enrolled in this study, after taking written and informed consent from them. The patients were divided into 2 groups by envelope technique. Group A was assigned to the patients who underwent open hemorrhoidectomy and Group B was assigned tothe patients who underwent closed hemorrhoidectomy. Preoperative assessment for anesthesia department was made, similar in both groups.

Exclusion criteria includes Grade first and fourth hemorrhoids were omitted since we included Grade second and third hemorrhoids. Patients with co-morbidities (DM, HTN), lower GI issues, chronic steroids use, bleeding disorder or having any pre-anal disease, were excluded from the surgery. Moreover, patients who were lost to follow-up were also ruled out from this analysis.

Inclusion criteria includes patients of both genders between the ages of over 18 years and below 70 years with Grade second and third hemorrhoids were included in this study. Both the groups were prepared preoperatively in a similar manner. In addition, baseline investigations and systemic analysis were also carried out.

Every patient was given clean enema overnight and the hairs were removed. Furthermore, every patient was given same pre-operative prophylactic antibiotic shot and the patient underwent surgery under spinal anesthesia, in lithotomy position in both the groups. In Group A, open hemorrhoidectomy was performed and the pedicle was ligated, with Vicryl 2.0. In Group B, closed hemorrhoidectomy was done, using the same sized suture (Vicryl 2.0). Post-operatively, the patients of both the groups were assessed for various early and late complications for one year. The early complications include pain, duration of hospital stay, need for additional anesthesia (breakthrough pain), return to work and wound infection. Besides, the late complications include bleeding recurrence and anal stenosis were assessed in this group. After surgery, same medication was prescribed to both the groups and the pain was assessed using Visual Analogue Scale, score ranging from (0- No pain to 10- worst pain). It was assessed on day 1, 2, 3, 10 and 30. Patient was discharged on 3rd post-operative day and were reassessed on 10th, 30th postop day and 3, 6, 12 month.

Results:
100 patients were recruited, 50 in Group A

(Milligan Morgan hemorrhoidectomy) and 50 in Group B (Ferguson hemorrhoidectomy) within the age limit of 18 years to 70 years. The mean average age in Group A and Group B is 46.34% and 41.83% respectively (Graph-1). There was slight male gender predominance with 56% males and 44% females in Group A whereas, there are 62% males and 38% females in Group B (Graph-2). In Group A, the duration of symptoms were 8.3 months and prevalence of second degree is 28% while 72% in third degree. However, the duration of symptoms were 10.4 months and the prevalence of second and third degree is 22% and 78% correspondingly in Group B. Patient demographics are summarized in Table 1.

The presenting symptoms among Group A were that, 76% patients were admitted with Bleeding per Rectum, 6% patient came with complain of Itching. 83% patients came due to peri-anal swelling and 12% came on follow up with complain of painful defecation. However the presenting complaint among Group B were that, 82% patients developed early Bleeding per Rectum. Only 3% complained of Itching. 73% patients with perianal swelling and 8% patients came with the complaint of painful defecation, as stated in Table 2.

The comparison among various parameters between the two groups lead to the conclusion that there was more post-operative hospital stay, delayed average return to work and increase chances of wound infection, as defined and reported by patients in Group B. The post-operative pain was assessed using VAS score which was lower in open hemorrhoidectomy (Group A) compared to closed hemorrhoidectomy (Group B) but the difference was not statistically significant (p=0.17) as represented in Graph 4. Despite this, the postoperative bleeding was significantly less in Group B in comparison with Group A (Graph 5)

Discussion:

One of the most common surgical conditions a surgeon deals with on a daily basis is hemorrhoids. Hemorrhoids do not pose a life-threatening hazard, but they still give the sufferer pain whenever he defecates. As a result, it merits thorough assessment and control. There has been numerous research that have examined the various methods of treating hemorrhoids, but no perfect method has ever been articulated for this condition.[6,7] In Shaikh et al[8] study, out of 213 patients with late 2nd degree and third or fourth degree hemorrhoids were randomly assigned to two groups, there were 110 patients in group A operated by an open method and 103 patients in group B operated by closed method. Age of patients ranged from 22-70 years with mean age of 45.5 years. Peak incidence was between 41-50 years. Out of 213 patients, 170(79.81%) were males and 43(20.18%) were females.

In our study, out of 100 patients with 2nd and 3rd degree hemorrhoids were organized in two groups, there were 50 patients in group A operated by an open method and 50 patients in group B operated by closed method. Out of 100 patients, 28(56%) were males and 22(44%) were females in group A, whereas in group B, 31(62%) were males and 19(38%) were females. Males outnumbered females in a study, as was also the case in Akindiose, Emeka, and Picchio's respective studies,[9,10] might be because women were reluctant to go for a checkup. In a study,[11] Post-operative painful defecation was 30% after closed and 41.6% after open hemorrhoidectomy. One international study shows the low incidence of postoperative bleeding after closed and a little bit higher incidence after open method. Same is found in a study.[12]

A clinical study about the comparison of both closed and open hemorrhoidectomy of 100 patients reported that closed hemorrhoidectomy shows better results of pain relief and healing of wound as compared to open hemorrhoidectomy while the recurrence chances might be similar after one or two years.[13] A randomized control trial reported the comparison between Milligan-Morgan hemorrhoidectomy and Ferguson hemorrhoidectomy. The conclusion was in favor of Ferguson hemorrhoidectomy that helps to get the ameliorated response of surgery.[14] The primary wound closure follow-

ing hemorrhoidectomy without leaving any raw areas, as in open hemorrhoidectomy, results in decreased postoperative pain in a study.[15] Khalid's research, in contrast, found no distinction between open and closed hemorrhoidectomy groups in terms of post-operative pain.[16] Moreover, the requirement of additional postoperative analgesia was first to be higher in Group B v/s Group A with open hemorrhoidectomy.

Conclusion:
Our study concluded that close hemorrhoidectomy is better option in terms of early return to work and slim chances of post-operative bleeding. Whereas, Open hemorrhoidectomy is better option in terms of minimum chances of wound infection and prolonged post-operative hospital stay but slightly more incidence of wound infection further research is needed to evaluate more.

Conflict of interest: None

Funding source: None

Role and contribution of authors:
Umair-Ul-Islam, collected the data, references and did the initial writeup.

Ata Ur Rehman, critically review the article and made final changes

Tehreem Aslam, collected the data and helped in introduction writing.

Syed Owais Hussaini, collectged the references and helped in discussion writing.

Syed Muhammad Hameez Qadri, collected the data, references and helped in interpretation of data.

Lama Qadri, went through the article and made final changes.

Fareya Usmani, went through the article and made final changes

References:

1. Orlay G. Haemorrhoids - a review. Aust Fam Physician 2003; 32:523-6.
2. Hartlay GC. Rectal bleeding. Aust Fam Physician 2000; 29:829-33.
3. Aroya A, Perez F, Miranda E, Serrano P, Candela F, Lacueva J et al. Open versus closed day case Haemorrhoidectomy: is there any difference? Results of a prospective randomized study. Int J Colorectal Dis 2004;19:370-3
4. Ahmed AN, Fatima N, Hussain RA, Chowdhry ZA, Qadir SNR. Strengths and limitations of close vs open Haemorrhoidectomy of 2nd and 3rd degree. Ann KE Med Coll 2003; 9:219-20.
5. Kim SH, Chung CS. Open vs closed hemorrhoidectomy. Dis Colon Rectum 2005; 48:108-13.
6. Sharma B, Bhati T. A Comparative Study of Surgical Treatment of Hemorrhoids: Stapled vs Open and Closed Hemorrhoidectomy. Journal of Mahatma Gandhi University of Medical Sciences and Technology. 2018 Aug 1; 2(3):109-13.
7. Du T, Quan S, Dong T, Meng Q. Comparison of surgical procedures implemented in recent years for patients with grade III and IV hemorrhoids: a network meta-analysis. International journal of colorectal disease. 2019 Jun;34(6):1001-12
8. SHAIKH A.R., DALWANI A.G. and SOOMRO N.: An evaluation of milligan-morgan and Ferguson procedures for hemorrhoidectomy at Liaquat University hospital Jamshoro, Hyderabad, Pakistan. Pakistan Journal of Medical Sciences, 29 (1): 122, 2013.
9. Giamundo P, De Angelis M, Mereu A. Hemorrhoid laser procedure with suture-pexy (HeLPexx): a novel effective procedure to treat hemorrhoidal disease. Techniques in Coloproctology. 2020 Feb; 24(2):199-205.
10. Nikam V, Deshpande A, Chandorkar I, Sahoo S. A prospective study of efficacy and safety of rubber band ligation in the treatment of Grade II and III hemorrhoids-a western Indian experience. Journal of Coloproctology (Rio de Janeiro). 2018 Jul;38:189-93
11. Ray-Offor E, Amadi S. Hemorrhoidal disease: Predilection sites, pattern of presentation, and treatment. Ann Afr Med 2019; 18:12-6.
12. Aigner F, Gruber H, Conrad F, Eder J, Wedel T, Zelger B, et al. Revised morphology and hemodynamics of the anorectal vascular plexus: impact on the course of hemorrhoidal disease. Int J Colorectal Dis 2009; 24:105-113.
13. Arroyo A, Perez F, Miranda E, Serrano P, Candela F, Lacueva J. Calpena R. Open versus closed day-case hemorrhoidectomy: is there any difference? Int JColorectal Dis2004; 19(4), 370-3.
14. Bakhtiar N, Moosa FA, Jaleel F, Qureshi NA, Jawaid M. Comparison of hemorrhoidectomy by Ligature with conventional Milligan Morgans hemorrhoidectomy. Pak JMed Sci, 2016; 32(3):657.
15. Sobrado CW, Klajner S, Hora JA, Mello A, Silva FM, Frugis MO, Sobrado LF. Transanal hemorrhoidal dearterialization with mucopexy (Thd-M) for treatment of hemorrhoids: Is it applicable in all grades? Brazilian Multicenter Study. ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo). 2020 Aug 24;33
16. Dekker L, Han-Geurts IJ, Rørvik HD, van Dieren S, Bemelmans WA. Rubber band ligation versus hemorrhoidectomy for the treatment of grade II–III hemorrhoids: a systematic review and meta-analysis of randomised controlled trials. Techniques in Coloproctology. 2021 Jun; 25(6):663-74.