POST OPERATIVE OUTCOMES OF OPEN VERSUS CLOSED HAEMORRHOIDECTOMY

Ainul Hadi, Shehzad Akbar Khan, Zahid Aman, Humera Zafar,
Farrukh Ozair Shah, Aziz ur Rehman, Mazhar Khan

Department of Surgery,
Hayatabad Medical Complex, Peshawar & Combined Military Hospital Rawalpindi - Pakistan.

ABSTRACT

Objective: *To compare the therapeutic results of open haemorrhoidectomy with closed one in terms of post operative pain, bleeding and wound healing.*

Methodology: *This experimental study was carried out in the surgical unit, at Hayatabad Medical Complex Peshawar from March to August 2009. Fifty patients of 2nd, 3rd and 4th degree haemorrhoids having no systemic illnesses were included in this study. Patients were randomly divided in two equal groups. Group A included patients undergoing open haemorrhoidectomy and group B catered for patient with closed haemorrhoidectomies. Post operatively these patients were followed up in the OPD for 02 months and were evaluated for post operative pain, bleeding and wound healing in addition to other complications like urinary retention and anal fissure.*

Results: *The mean age of the sample was 45.5±2.3 years. In group B, 08 (32%) patients had mild pain, 10 (40%) had moderate and 02 (08%) had sever pain post operatively as compared to 13 (52%) patients with mild, 11(44%) with moderate and 06 (24%) with severe pain in group A ($p < 0.05$). Similarly early post operative bleeding was noted in 15 (60%) patients in group A and 06 (24%) patients in group B ($p < 0.05$). Wound healing time was just over 02 weeks in group B as compared to more than 04 weeks in group A ($p < 0.05$).*

Conclusion: *Closed haemorrhoidectomy technique is much better than open technique for 2nd, 3rd and 4th degree haemorrhoids.*

Key words: *Haemorrhoidectomy, Techniques, Complications.*

INTRODUCTION

Haemorrhoids are engorged veins in relation to the anal canal.[1] It is a common disease affecting people of all ages and both sexes[2]. It has been estimated that 50% of the population has haemorrhoids by the age of 50 years[3] and these are supposed to be the commonest cause of rectal bleeding[4]. It is more common in the prosperous societies, perhaps related to exercise; diet and bowel habits[5].

The treatment modalities for haemorrhoids are ambulatory and surgical[6]. Ambulatory options include injection sclerotherapy[7], rubber band ligation[8,9], cryotherapy, infrared coagulation, bipolar diatheramy and Lord,s dilatation.[6] Surgical treatment options include open (Milligan Morgan) haemorrhoidectomy[10,11], closed (Ferguson) haemorrhoidectomy[12,13], sub mucous resection, Park,s haemorrhoidectomy, Whitehead,s haemorrhoidectomy, Ligasure haemorrhoidectomy,[14] Laser surgery and stapled haemorrhoidectomy[15-17].

First and 2nd degree haemorrhoids usually respond to outdoor measures including dietary modifications, injection sclerotherapy, rubber band ligation etc[18]. Surgical treatment is considered to be the best therapeutic modality for 3rd and 4th degree haemorrhoids[19]. Various outcomes have been reported with controversy still existing as to which of the techniques has an edge over the other[20]. Open haemorrhoidectomy is the traditional treatment of haemorrhoids and is widely practiced in UK[20]. as well as in our country. In this technique the haemorrhoidal tissue is excised and wound is left open to heal by secondary intention[6,20]. Closed haemorrhoidectomy is the one

in which excision of the haemorrhoids is followed by primary suturing of skin and mucosal edges. This method is commonly used in USA[6,20]. This method is stated to be better than open technique regarding post operative complications[21,22,23].

Although the efficacy of closed haemorrhoidectomy is well established in the western world but in Pakistan the traditional open method is still more commonly practiced as compared to closed haemorrhoidectomy.

The aim of this study is to compare the results of two techniques in terms of post operative pain, bleeding and wound healing in our local setting before advocating its regular use.

METHODOLOGY

This study was conducted in the surgical unit, at Hayatabad Medical Complex Peshawar from March to August 2009. Fifty patients of either sex, presenting with 2nd, 3rd and 4th degree haemorrhoids and having no systemic illness were included in this study. Patients with recurrent and thrombosed haemorrhoids or those having associated diseases like perianal abscess, fistulae, fissures, ulcerative colitis and rectal cancer, were excluded. This was a probability sample technique. Sample size was limited by the time duration of the study. A sample size of 50 divided in to 2 equal groups was estimated as adequate for any statistical calculation.

Patients were admitted through OPD after confirming the diagnosis by taking a detailed history, digital rectal examination and proctoscopy. Baseline investigation like full blood count, blood urea and sugar and hepatitis screening were performed in all patients. Similarly X ray chest ECG (above 40 years) were done to assess the fitness for general anaesthesia. Standard antibiotic prophylaxis and bowel preparation (kleen enema) was carried out in all patients. Patients were randomly divided in to two groups by giving them numbers 01 to 50. All odds were put in group A and even numbers in group B. Randomization of the division process ensured more or less equal number of patients with varying degree of haemorrhoids in the 2 groups. We therefore consider the 2 groups homogenous and adequate for the purpose of our study.

Patients in group "A" were subjected to open haemorrhoidectomy while those in group "B" underwent closed haemorrhoidectomy. The two groups were comparable regarding disease severity. An informed consent was taken from all the patients regarding the type of surgical procedure. Surgery was performed under general anaesthesia. Post operatively all patients were kept under observation in surgical ward for 24 hours and their vital signs were regularly checked. Moreover variables such as post operative pain and bleeding were closely observed until they were discharged satisfactorily. Post operative treatment included high fiber diet, sitz baths with warm water, antibiotic ointment with local anaesthetic and regular analgesia. All patients were advised to visit the OPD for follow up at 02 weeks, 01month and 02 months after surgery. At each visit, rectal examination including digital rectal examination was performed and signs of any complication like post operative pain, bleeding and anal stenosis were noted. Pain assessment was done subjectively by asking the patients their return to normal level of activity. Any need for analgesia was also asked. Wound healing was assessed and any sign of wound infection like redness, purulent discharge and foul smell were looked for. All findings were recorded on a preformed proforma. The association between surgical procedures and the post operative outcomes of pain, bleeding and wound healing was analyzed for statistical significance at a p-value of 0.05.

RESULTS

In this study, a total of 50 patients (25 in each group) were assessed. Out of 50 patients, 31 (62%) were males and 19 (38%) were females with male to female ratio of 1.6. the age ranged from 21-70 years with a mean age of 45.5 years (± 2.3 SD). Twenty six (52%) patients were in the age range of 40-59 years (Table 1).

Table 1: Age range of patients with degrees of haemorrhoids and procedures (n=50)

Age range	Total patients	Male	Female	Haemorrhoid Degrees			Procedures	
				2nd	3rd	4th	Open	Close
21-39 years	10 (20%)	06	04	05	03	02	06	04
40-59 years	26 (52%)	16	10	12	08	06	10	16
60-70 years	14 (28%)	09	05	07	04	03	09	05
Total	50 (100%)	31	19	24	15	11	25	25

Table 2: Comparison of Open and Closed haemorrhoidectomy (n= 50)

Complications		Group A (OH)	Group B (CH)	P-value
Pain	Mild	13 (52%)	08 (32%)	0.01
	Moderate	11 (44%)	10 (40%)	
	Severe	06 (24%)	02 (08%)	
Bleeding	Early	15 (60%)	06 (24%)	0.01
	Late	02 (08%)	01 (04%)	
Wound healing		> 04 weeks	02 weeks	0.03
Urinary retention		03 (12%)	02 (08%)	0.07
Anal fissure		01 (04%)	00 (00%)	0.09

Table 2 shows postoperative complications of both techniques. Regarding pain severity, 08 (32%) patients had mild pain, 10 (40%) had moderate 02 (08%) had severe pain in group "B" as compared to 13 (52%) patients experiencing mild pain, 11 (44%) moderate and 06 (24%) severe pain in group "A". P value was less than 0.05 which is significant and shows a clear difference in favor of closed haemorrhoidectomy between the two procedures in terms of post operative pain.

Early post operative bleeding was noted in 15 (60%) patients in group "A" as compared to 06 (24%) in group "B" ($p < 0.05$). Two (08%) patients in group "A" (open haemorrhoidectomy) had massive post operative bleeding due to slipping of ligature. They were shifted back to the operation theatre and the bleeders were re-ligated. Rest of the patients in both groups had mild early bleeding, soiling the cloth or in the form of spotting which was managed by close observation and reassurance and did not need any active management. Late post operative bleeding was noted in 02 (08%) patients in group "A" and 01 (04%) patient in group "B". ($p > 0.05$ i.e. insignificant). They were treated conservatively.

All patients in group "B", had complete wound healing after 02 weeks as compared to more than 04 weeks in group "B" with open haemorrhoidectomy. ($p < 0.05$) Other post operative complications included urinary retention (03 in group A and 02 in group B with p value > 0.05 - insignificant) and anal fissure (01 case in group A).

At 1st follow up visit after 02 weeks, patients of both groups had no significant post operative pain and bleeding. After 02 months follow up, patients of both groups had complete wound healing except one who was picked up with post operative anal fissure (Table 2).

DISCUSSION

Haemorrhoids can occur at any age but peak incidence is found in 5th decade of life[3,20]. In the present study, 52% of our patients were between 46-63 years of and the mean age was 45.5±2.3 years. These are comparable to 46 years by Malik GA et al[20] and 43.5 years by Aroya et al[21].

The distal part of anal canal is among the most richly innervated tissues in the digestive tract. Thus post haemorrhoidectomy pain is an over riding concern in post operative phase. A great deal of emphasis has been laid on the management of pain after haemorrhoidectomy, not only because of the pain it self but also because of its being a cause of post operative urinary retention.[6] The exposed area of anal canal following open haemorrhoidectomy has been implicated as the cause of pain.[6] For this reason closed haemorrhoidectomy has been advocated.[24] In our study, pain severity was lesser in closed haemorrhoidectomy group as compared to open group. Some studies have shown contrasting findings e.g. Ho et al[25] and Arbman et al[26] reported that there is no difference in post operative pain in both techniques. Shoaib et al showed that pain and analgesic requirement on the day of surgery and 1st post operative day was significantly lower in open haemorrhoidectomy than closed one.[5] In another study by Gencosmanoglu R et al reported that the open technique is more advantageous because patients experience less discomfort during the early post operative period, although healing time was shorter with closed technique.[27] Our study is supported by Kim et al who concluded that the pain score was significantly lower in closed group than in open one.[23] Similarly studies conducted by Malik GA et al,[20] Aman Z et al[6] and Aziz A et al[28] also support our series in terms of less post operative pain associated closed haemorrhoidectomy. Uba AF et al reported quicker healing

as well as less bleeding[24].

In the present study, there was a significant difference between the two procedures for early post operative bleeding i.e. 15 vs. 06 patients in open and closed groups respectively. It was mild to moderate bleeding and was managed with conservative measures. Massive post operative early bleeding occurred in 02 patients after open haemorrhoidectomy. Its cause is always due to inadequate ligation of haemorrhoid pedicles which require emergency surgical intervention. Massive bleeding is usually uncommon with closed haemorrhoidectomy because haemostasis is confirmed before closing the wound. Although Arayo et al reported that there is no difference between the two techniques regarding post operative bleeding [21] but our series is comparable with studies conducted by Malik GA et al,[20] Aman Z et al[6] and Aziz A et al[28] which report a significant difference between the two techniques in terms of post operative bleeding. More recently Ligasure haemorrhoidectomy[29] has been shown to provide even better alternative to these conventional haemorrhoidectomy techniques with respect to post operative pain, blood loss, operating time as well as time to return to work or normal activity. Late post operative bleeding was noted in 02 patients as compared to 01 patient in closed haemorrhoidectomy. It occurs usually as result of sepsis in the pedicle or the erosion of suture. Basso L et al reported 02% frequency of delayed bleeding with a 04 days mean interval from the operation[30]. They employed Foley's catheter technique for temponade of the bleeding point.

Wound is an important outcome measure after haemorrhoidectomy. In our **series,** we found that closed technique is better than open technique in terms of wound healing. Our findings are in conformity with almost similar results of Ahmed et al[22] and Ho et al[25] who reported that healing time was shorter and quick with closed technique than open one. Similarly Arbman et al described that wound heals faster in closed technique but there is associated risk of wound dehiscence and no significant reduction in post operative pain[26]. In another study, Ho YH et al conducted a randomized, controlled trial, comparing wound healing and post operative pain after open and closed haemorrhoidectomy. They reported faster (4.9 weeks vs. 6.9 weeks in open and closed groups respectively) and more reliable wound healing with open haemorrhoidectomy technique[31].

Other associated complications urinary retention (05 out 50 cases) and anal fissure (01 out 50 cases) which have also been mentioned in the literature[6,20,28].

At 3rd follow up visit after 02 months, patients of both open and closed haemorrhoidectomy groups had no post operative pain and bleeding complaints and their wounds were completely healed except one patient who had developed anal fissure after open haemorrhoidectomy.

CONCLUSION

Closed haemorrhoidectomy is a better option than open one for 2nd, 3rd and 4th degree haemorrhoids with respect to post operative pain, bleeding, wound healing and anal stenosis.

REFERENCES

1 William NS. The anus and anal canal. In: Russell RCG, William NS, Bulstrode CJK, editors. Bailey & love Short practice of surgery. 24th ed. London: Hodder Arnold; 2004. p. 1255-62.

2 Sandhu PS, SingK. A randomized comparative study of micrinized flavonoids and rubber band ligation in the treatment of acute internal haemorrhoids. Indian J Surg 2004;66:281-5.

3 Orlay GC. Haemorrhoids--a review. Aust Fam Physician 2003;32:523-6.

4 Hartlay GC. Rectal bleeding. Aust Fam Physicians 2000;29:829-33.

5 Shoaib M, Ali AA, Naqvi N, Gondal KM, Chaudhry AM. Open versus closed haemorrhoidectomy: an experience at Mayo Hospital. Ann KE Med Coll 2003;9:65-8.

6 Aman Z, Ullah I, Siddique M, Naeem M, Ahmed T, Haq MZ. Comparison of early operative outcomes in open versus closed haemorrhoidectomy. Ann Pak Inst Med Sci 2009;5:88-90.

7 Khan N, Malik MA. Injection sclerotherapy versus electro coagulation in the management outcome of early haemorrhoids. J Pak Med Assoc 2006;56:579-82.

8 Khaliq T, Shah SA, Mehboob A. Outcome of rubber band ligation of haemorrhoids using suction ligator. J Ayub Med Coll Abbottabad 2004;16:34-7.

9 Zafar A. Rubber band ligation in haemorrhoids. J Coll Physicians Surg Pak 2002;12:48-51.

10 Milligan ET, Morgan CN, Jones LE, Officer R. Surgical anatomy of the anal canal and the operative of haemorrhoids. Lancet 1937;2:1119-24.

11 Kim JC. Analysis of surgical treatment for circumferentially protruding haemorrhoids:

complete excision with repair using flaps versus primary excision with secondary suture ligation. Asian J Surg 2006;29:128-34.

12 Chung CC, Ha JPY, Tsang WWC, Li MKW. Double blind, randomized trial comparing harmonic scalpel haemorrhoidectomy, bipolar scissors haemorrhoidectomy and scissors excision: ligation technique. Dis Colon Rectum 2002;45:789-95.

13 Jongen J, Bach S, Stubinger SH, Bock JU. Excision of thrombosed external haemorrhoids under local anaesthesia. Dis Colon Rectum 2003;46:1226.

14 Chung YC, Wu HJ. Clinical experience of suturless closed haemorrhoidectomy with Ligasure. Dis Colon Rectum 2003;46:87-92.

15 Longo A. Pain after stapled haemorrhoidectomy. Lancet 2000;356:2189-90.

16 Singer MA, Cintron JR, Fleshman JW. Chaudhry V, Birnbaum EH, Read TE, et al. Early experience with stapled haemorrhoidectomy in the United States. Dis Colon Rectum 2002;45:360.

17 Ortiz H, Marzo J, Armendariz. Randomized clinical trial of stapled haemorrhoidectomy versus conventional diathermy haemorrhoidectomy. Br J Surg 2002;89:1376.

18 Steele RJC, Campbell K. Disorders of the anal canal. In: Cuschieri SA, Steele RJC, Moossa AR. editors. Essential Surgical Practice. 4th ed. London: Hodder Arnold; 2002. p. 634-7.

19 Ramadan E, Vishne T, Dreznik Z. Harmonic scalpel haemorrhoidectomy: preliminary results of a new alternative method. Tech Coloproctol 2002;6:89-92.

20 Malik GA, Wahab A, Ahmed I. Haemorrhoidectomy: open versus closed technique. J Surg Pak 2009;14:170-2.

21 Aroya A, Ferez F, Miranda E, Serrano P, Candeia F, Lacueva J, et al. open versus closed day case haemorrhoidectomy: is there any doifference? Results of a prospective randomized study. Int J Colorectal Dis 2004;19:370-3.

22 Ahmed AN, Fatima N, Hussain RA, Chowdhry ZA, Qadir SNR. Strengths and limitations of closed versus open haemorrhoidectomy of 2nd and 3rd degree. Ann KE Med Coll 2003;9:219-20.

23 Kim SH, Chung CS. Open versus closed haemorrhoidectomy. Dis Colon Rectum 2005;48:108-13.

24 Uba AF, Obekpa PO, Ardill W. Open versus closed haemorrhoidectomy. Niger Postgrad Med J 2004;11:79-83.

25 Ho YH, Sco-choen F, Tan M, Leon AF. Randomised control trial of open and closed haemorrhoidectomy. Br J Surg 1997;84:1729-30.

26 ArbmanG, Krook H, Haapaniemi S. Closed versus open haemorrhoidectomy: is there any difference? Dis Colon Rectum 2000;43:34-4.

27 Genocosmanoglu R, Sad O, Koc D, Incoeoglu R. Haemorrhoidectomy: open or closed technique? A prospective randomized clinical trial. Dis Colon Rectum 2002;45:70-5.

28 Aziz A, Ali I, Alam SN, Manzar S. Open haemorrhoidectomy versus closed haemorrhoidectomy: the choice should be clear. Pak J Surg 2008;24:254-7.

29 Tan EK, Cornish J, Darzi AW, Papagrigoriadis S, Tekkis PP. Meta-analysis of short term outcomes of randomized controlled trials of Ligasure vs. conventional haemorrhoidectomy. Arch Surg 2007;142:1209-18.

30 Basso L, Pescatori M. Outcome of delayed haemorrhage following surgical haemorrhoidectomy. Dis Colon Rectum 1994;37:288.

31 HoYH, Seow-Choen F, Tsang C, Eu KW. Randomized trial assessing anal sphincter injuries after stapled haemorrhoidectomy. Br J Surg 2001;88:1449-55.

Address for Correspondence:
Dr. Ainul Hadi
Consultant Surgeon,
Department of Surgery,
Hayatabad Medical Complex Peshawar - Pakistan
E-mail: surgeonhadi05@yahoo.com