Original Article

Early Complications of Open versus Closed Internal Anal Sphincterotomy in the Management of Chronic Anal Fissure

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ABSTRACT

Objective: This study was performed to compare the outcome of open and closed lateral internal sphincterotomy in terms of early postoperative complications.

Study Design: Quasi-experimental study

Place and Duration of Study: This study was conducted at the Department of Surgery, Liaquat University of Medical & Health Sciences, Jamshoro Pakistan from June 2017 to May 2018.

Materials and Methods: All the patients with chronic anal fissure were consented and enrolled in the study. After lateral internal anal sphincterotomy, either by open or closed technique, outcomes were recorded on a pre-approved Performa. Data regarding patient's demographic characteristic age, gender and pain, bleeding, infection, soiling of clothes) was recorded.

Results: A total of 50 patients underwent closed anal sphincterotomy (11 males; mean age, 34.9 years) and 50 patients had open anal sphincterotomy (12 males; mean age, 27.77 years). There was a significant difference in infection rates between open and closed internal sphincterotomy (4.4% & 15.6%; p-value =0.013). The postoperative pain and bleeding were statistically insignificant in both groups (p=0.145).Postoperative hospital stay was found to be significant (p-value = <0.001) and mean shorter hospital stay in patients undergoing closed anal sphincterotomy.

Conclusion: Closed and open Lateral internal sphincterotomy is effective in the treatment of chronic anal fissure. Close internal sphincterotomy is preferable to open internal sphincterotomy because it affects a similar rate of postoperative pain, bleeding, and fewer hospital stay days.

Key Words: Anal fissure; Continence; Sphincterotomy; Closed Anal Sphincterotomy

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INTRODUCTION

An anal fissure is a painful elongated ulcer in the mucosa of distal anal canal[1] extending from the anal verge towards the dentate line[2,3]. Traumatic or ischemic damage to the anal mucosa produces a superficial tear, most frequent site for anal fissure is the midline posteriorly followed by midline anteriorly. An anal fissure is a common anorectal problem, first recognized as a disease in 1934[4] and presently affects 10% of patients visiting proctology clinics[5]. Treating anal fissure has remained a challenge for surgeons.

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Many options including Botox, topical sphincterotomy agents[6] are available; surgical sphincterotomy[7] remains a gold standard. Although sphincterotomy carries a significant risk of incontinence in 6-30% of cases, it is still a safe and simple procedure if done by skilled proctologic surgeons[8,9]. To avoid this complication, the concept of tailored sphincterotomy has been evolved having its own merits and demerits[10]. However the classical method of dividing the sphincter to an optimum length remains a gold standard. Both open and closed methods of lateral internal anal sphincterotomy have been compared in a number of studies internationally[11-15]and are found to be almost equally good but close method seems to have an extra advantage of a smaller incision, less tissue insult, minimal bleeding and less post-operative complications than open method[16].

We hypothesized that closed lateral internal anal sphincterotomy has less early postoperative complications than open internal anal sphincterotomy. This study was performed to compare the outcome of open and closed lateral internal sphincterotomy in terms of early postoperative complications.

MATERIALS AND METHODS

This quasi-experimental study was done at the department of surgery, Liaquat University of Medical & Health Sciences Jamshoro from June 2017 to May 2018. In total 100 patients irrespective of age and gender diagnosed with chronic anal fissure by the presence of pain on defecation for more than six weeks, presence of sentinel pile and exposure of fibres of internal anal sphincter were included. Those patients who had chronic anal fissure secondary to some organic reason were excluded. Also, patients with recurrent fissure in ano were excluded. Written informed consent was taken, and subjects were given the liberty to withdraw from the study at any point without stating a reason. After seeking consent, patients were divided into two groups and were assigned group A or B through the slip method. Group A patients underwent open sphincterotomy under spinal or general anaesthesia. At the same time, patients in group B underwent closed sphincterotomy. After the discharge, patients were followed for the first visit at two weeks, the second visit at six weeks and the last visit at three monthsStudy variables were recorded on a predesigned Performa. Statistical analysis was done and p values were calculated with level of significance below 5% using independent t-test and/or chi-square test.

RESULTS

In group A patients mean age was 33.57±7.24 years, and in group B, it was 28.68±7.64 years. The gender distribution showed female preponderance in both groups. In group A 35 (70%) were females and 15 (30%) were males while in group A 33 (66%) patients were females and 17 (34%) were males. (Table 1)

Table No. 1: Baseline Details of all the patients

Variables	Group A	Group B	P-value
Mean age	33.57±7.2	28.68±7.64	0.01
Gender			N/S
Male	15 (30%)	17 (34%)	
Female	35 (70%)	33 (66%)	

The infection rate was statistically significant in patients who underwent closed sphincterotomy technique, and this is depicted in detail in table 2.

Table No. 2: Comparison of Infection Rate between Open and Closed Techniques

	Operative Techniques			
	Open Group A		Closed Group B	
Infection	***n***	**%**	***n***	**%**
Yes	3	6	7	14
No	47	94	43	86
Pearson Chi-Square = 6.17; P- value = 0.013				

The perception of postoperative pain was not statistically significant (p=0.145) in both groups. However, the number of patients in group A was more (18) than patients in group B(13) who required postoperative analgesia. Amongst 50 patients in group A, 06 (12%) in open anal sphincterotomy observed post-operative bleeding while in close anal sphincterotomy (group B) only 4 (8%) experienced post-operative bleeding. This difference was statistically insignificant (p-value = 3.20). Post-operative soiling was not seen in any group;however, two patients in group A complained of incontinence to flatus which resolved spontaneously within fifteen days. (p-4.35). Hospital stay was longer in group A as compared to group B, a statistically significant difference was observed between both groups with p-value <0.05. (Table 3)

Table No. 3: Comparison of outcomes between both groups

Variables	Group A	Group B	P-value
PO Analgesia	18 (36%)	13 (26%)	2.42
Bleeding	6 (12%)	4 (8%)	3.2
PO Soiling	0	0	-
Hospital Stay	2.8±0.889	1.7±0.824	0.0001

DISCUSSION

One of two commonly known methods can be used for lateral internal sphincterotomy. Both approaches can reliably achieve a sphincterotomy that decreases anal canal pressure substantially. In 90-98% of patients, fissure healing has been shown, regardless of the procedure used. The mean submission age was 31.12± 7.82. A majority of patients between the ages of 26 and 30 were about 28.8 percent. The average age recorded in numerous surveys is 30-45 years. Of 100 patients, 77 percent were female and 33 percent were male and 2.33:1 was female-to-male. Contrary to a report by Gupta V et al[17]. in which the ratio of men and women was 1.47:115. In another study by Shafiq-Ullah et al.[18], 84% of patients were male and 16% were female and the ratio between men and women was 5.1:116. We observed that both approaches in the fissure procedure were successful by comparing the complication rates of open and closed sphincterotomy techniques. There were no cases of incontinence or soiling, and most patients were easily healed and their symptoms fixed. Pernkoft et al.[19] reported that they had a relatively higher complication risk in the open than closed sphincterotomy. Kortbeek et al. have also documented the use of closed sphincterotomy to treat CAFs with decreased postoperative complications[14]. We observed that patients with closed sphincterotomy procedures were more affected by postoperative wound infection.

This result is more than what Sanniyasi et al stated. There have been no reports of incontinence or soiling, and most patients have undergone fast recovery and symptoms resolution[20]. In the current research, medium hospital stay in patients with closed sphincterotomy was shorter, according to results from Bano et al. and Pernikoff et al. the complication risk in open sphincterotomy was comparatively higher[19,21].

CONCLUSION

It is concluded that open and closed lateral internal sphincterotomy are both equally effective in treating chronic anal fissure. However, early postoperative complications are fewer with closed technique; also, the hospital stay is minimal.

Author's Contribution:

Concept & Design of Study:	Jabran Zafar
Drafting:	Fazila Hashmi, Altaf Ahmed Talpur
Data Analysis:	Ishrat Rahim Katyar, Iqra Khanzada, Riaz Akhtar
Revisiting Critically:	Jabran Zafar, Fazila Hashmi
Final Approval of version:	Jabran Zafar

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. William NS. The anus and anal canal. In: Russel RCG, Williams NS, Bulstrode CJK, editors. Bailey and Love's Short Practice of Surgery. 25th ed. London: Chapman and Hall; 2008.p.1251-53.
2. Murshed KM, Siddque MI, Rahman MA. Effectiveness and complications of 0.2% Glyceryltrinitrate in the treatment of chronic anal fissure. Jour Bang Coll Physicians Surg 2007;25:14-17.
3. EI Tinay OE, GurayaSy. The use of 0.2% glyceryltrinitrate ointment for anal fissures. Saudi J Gastroenterol 2005;11:40-44.
4. Lockhart Mummery JP. Diseases of the rectum and colon and their surgical treatment. Toronto: MacMillan; 1934.
5. Pescatori M, Interisano A. Annual report of the Italian coloproctology units. Tech Coloproctol 1995;3:29–30.
6. Bhardwaj R, Parker M. C. Modern perspectives in the treatment of chronic anal fissures. Annals Royal Coll Surgeons Engl 2007;89(5):472–78.
7. Saif A, Ahmed S, Pervaiz N, Naseem R. Closed lateral internal anal sphincterotmy for anal fissure with non-greaves (cataract knife). Pak J Surg 2008; 24(4):220-3.
8. Scholifield JH, et al. A dose finding of topical 0.1%, 0.2%, and 0.4 % glyceryltrinitrate ointment in patients with chronic anal fissure. Gut 2003:52:264-9.
9. Emile SH. Indications and Technical Aspects of Internal Anal Sphincterotomy: Highlighting the Controversies. Dis Colon Rectum 2017;60(1):128-132.
10. Nikhat AF, Ather MZ. Results of tailored lateral sphincterotomy for chronic fissure-in-ano. Int Surg J 2019;6:3947-50
11. Hamid H. Sarhan. Closed Vs Open Lateral Sphincterotomy in treatment of chronic anal fissure. Arch Clin Exp Surg 2012; I:219-223.
12. Garcia-Aguilar J. Open vs. closed sphincterotomy for chronic anal fissure: long term results. Dis Colon Rectum 1996; 39(4): 440-3.
13. Williamson A, Hoggart B. Pain: a review of three commonly used pain rating scales. J Clin Nurs 2005;14(7):798-804.
14. Kortbeek JB. Chronic fissure-in-ano: a randomize study comparing open in subcutaneous lateral internal sphincterotomy. Dis Colon Rectum 1992; 35(9): 835-7.
15. Anandaravi BN, Ramaswami B. Closed versus open lateral internal anal sphincterotomy in a chronic anal fissure. Int Surg J 2017;4:1055–8.
16. Wiley M, Day P, Rieger N, Stephens J, Moore J. Open vs. closed lateral internal sphincterotomy for idiopathic fissure-in-ano: a prospective, randomized, controlled trial. Dis Colon Rectum 2004;47(6):847-52.
17. Gupta V, Rodrigues G, Prabhu R, Ravi C. Open versus closed lateral internal anal sphincterotomy in the management of chronic anal fissures: A prospective randomized study. Asian J Surg 2014;37(4):178-83.
18. ShafiqUllah, Muhammad Nadeem. Closed versus open lateral internal sphincterotomy in chronic anal fissure: a comparative study of postoperative complications and results. Pak J Med Res 2004;43:1-4.
19. Pernikoff BJ, Eisenstat TE, Rubin RJ, Oliver GC, Salvati EP. Reappraisal of partial lateral internal sphincterotomy. Dis Colon Rectum 1994; 37:1291-5.
20. Sanniyasi S, Alexander N, Thiyagarajan M. Open Versus Closed Lateral Internal Sphincterotomy in Chronic Anal Fissures: A Prospective Study. Inter J Scient Study 2016; 4(7).
21. Bano KA, Begum M, Hussain R, Khan MS, Subhan F, Tahir F, et al. Closed versus open lateral internal sphincterotomy in chronic anal fissure: a comparative study of postoperative complications & results. Pak J Med Res 2004;43(1):19-21.