

Close Lateral Internal Sphincterotomy, an Effective Treatment for Chronic Anal Fissure

AFTAB AHMAD BAIG¹, MUHAMMAD SHAHID MEHMOOD², ASHFAQ AHMAD³

Department of Surgery, Akhtar Saeed Medical & Dental College/Hospital, Lahore

Correspondence to Dr. Aftab Ahmad Baig, Assistant Professor Email: draabaig@hotmail.com, Cell: 0321-4556215

ABSTRACT

Aim: To determine the close lateral internal sphincterotomy is an effective treatment for chronic anal fissure.

Study Design: Quasi experimental

Methods: The study was conducted at Surgical Unit I, Akhtar Saeed Trust Hospital Lahore, Pakistan from August 2017 to March 2019. Total 120 patients with chronic anal fissure, fulfilling the inclusion criteria, were selected. Close lateral internal sphincterotomy was done in all patients. Results were obtained and analyzed using SPSS version 15.

Results: Out of 120 patients, male and female patients were 84(70%) and 36(30%). Age was ranging from 20 to 65 years with mean age of 38.53 and symptoms duration more than 6 months. Among symptoms anal pain was present in all patients and constipation in 106(88.3%). On examination posterior midline anal fissure was present in 106(88.3%) patients and anterior midline in 10(8.3%) patients while 4(3.2%) patients had both anterior and posterior midline fissure. Sentinel skin tag was present in 26(21.7%) patients. After surgery 68.3% patients had adequate pain relief within 24 hours. Complete fissure healing was found in 96.7% of patients at 6 weeks. Wound infection 2 cases and flatus incontinence was noted in 3.3% that later improved within 10 weeks. Recurrence was seen in only two patients (1.66%) after one year.

Conclusion: On the basis of results in this study I found that close lateral internal sphincterotomy is an effective treatment in the management of chronic anal fissure. It heals fissure in majority of patients with very low rate of complications.

Keywords: Chronic Anal fissure (CAF), Lateral Internal Sphincterotomy (LIS)

INTRODUCTION

By definition anal fissure is a traumatically induced longitudinal split in the squamous epithelium of the distal anal canal. It is one of the most common proctologic problems presenting as pain on defecation.¹ It is also the common cause of bleeding per anus in infants and young children. The pain of anal fissure is intolerable and always disproportionate to the severity of ulcer. Chronic anal fissure is defined as a painful tear in the anal mucosa that fails to heal after six to eight weeks of conservative management².

Chronic anal fissure usually presents in 3rd and 4th decade of life. It is very distressing condition associated with spasm of internal anal sphincter³. It is common in both genders and commonly affect young and otherwise healthy individuals, but it can also be found in infants and elderly people.⁴ Posterior midline fissure is present in majority of patients while in 10-15% fissure is located in anterior midline. Females with child bearing age have more chances of getting anterior anal fissure specially soon after vaginal delivery. Multiple fissures may also be found in patients with Crohn's disease, Ulcerative colitis and tuberculosis. The commonest coexistent pathology with anal fissure is haemorrhoids⁵.

Most of the patients present with severe pain on defecation, streaks of blood per anus, pruritisani, mucous discharge and constipation though some may present with diarrhea¹⁻⁴.

Medical management includes bulk laxatives with or without lignocain cream, analgesics, hydrocortisone creams and chemical sphincterotomy with glyceryltrinitrate (GTN) or diltiazem cream.³ Medical therapy is effective in

most acute fissures, but will heal only approximately 50-60% of chronic anal fissures.

Botulinum toxin injection causes paralysis of internal sphincter for 2 to 3 months. During this time the anal pressure is low and fissure gets healed in many cases. Main side effect is 10 to 15% of flatus incontinence which improves with time and there is no permanent damage⁹.

Surgical therapy of anal fissure is indicated in patients after failed medical therapy, or have developed any complication. Surgical options include manual anal dilatation, lateral internal sphincterotomy and posterior anal flap¹⁰.

Manual anal dilatation is less controlled method and damages both external and internal anal sphincter and do cause unacceptably high level of incontinence. Failure and recurrence rates are also high¹¹.

In fissurectomy excision of the fissure is done from the anal canal and wound is left open without suturing. Lateral internal sphincterotomy is a surgical procedure in which only internal anal sphincter muscle is cut in left or right lateral position away from the fissure. Sphincterotomy can be performed by using an open or a closed technique. The procedure is successful in healing 90 to 95% of cases. It is superior to both GTN and manual anal dilatation^{10, 11}. Although it is usually performed under general anesthesia but it can be done under local anesthesia as a day case procedure with equally good results^{11,13,14}.

PATIENTS AND METHODS

The study was conducted at surgical unit I, Akhtar Saeed Trust Hospital Lahore from August 2017 to March 2019. Total of 120 patients fulfilling the inclusion criteria

were included. The inclusion criteria was presence of fissure for more than 6 weeks duration who had failed to respond to medical treatment. The patients who had laterally located fissure, anal fistula, anorectal abscess, significant haemorrhoidal disease, inflammatory bowel disease, previous anorectal surgery and patients with history of Psychiatric disease or anoreceptive intercourse were excluded.

All the patients had close lateral internal Sphincterotomy and were observed for relief in pain and other symptoms. During admission patients were advised mild analgesia in case of pain, discharge either on 1st or 2nd post operative days with regular follow up in OPD on 1st, 3rd and 6th post operative week. And the patients were assessed for relief of pain, bleeding per anum, any septic complications, incontinence to flatus and healing of fissure.

RESULTS

A total of 120 cases were subjected to close lateral internal sphincterotomy. All patients were followed-up at 1st, 3rd and 6th weeks after discharge from the hospital.

Patients age ranges from 20 to 65 years with a mean age of 38.53±11.37. The maximum number of patients belong to age group of 31-40 (38.3%). Male patients were 84 (70.0%) and female 36 (30.0%).

88.3% patients had fissure located in posterior midline while 8.3% in anterior midline. 3.2% of patients presented with simultaneous anterior and posterior fissure.

Painful defecation was present in all patients. Constipation and bleeding per rectum were present in 88.3% and 91.7% respectively. Anal tag was present in 21.7% of cases. Pruritisani was present in 34 (28.3%) of patients. No patients presented with incontinence to stools.

A total of 110 (91.7%) patients presented with bleeding per rectum at admission while only 4 (3.3%) persistently had complain of small amount of bleeding PR postoperatively with a P value of 0.000 (<0.0001) that was highly significant.

Out of 120 patients 82 (68.33%) of patients had adequate pain relief about 24 hours after operation and another 38 (31.7%) were discharged with mild pain. And the P value for the differences of frequencies between preoperative and post operative pain (according to numerical rating scale) was 0.000 (< 0.0001) that is quite significant.

At 3 weeks 8 (6.7%) patients had flatus incontinence and at six weeks only 4 (3.3%) of patient had incontinence to flatus that also improve after about 10 weeks. This reflects that flatus incontinence was transient that improved with time.

No patient had complained of cloths soiling at 6 weeks after close lateral internal sphincterotomy.

In 90 (75%) of patients fissure was healed at 3 weeks after closed lateral internal sphincterotomy and at 6 week 116 (96.7%) had healed fissure. 2 patients had postoperative wound collection that was successfully managed by conservative treatment. And 2 patients presented with recurrence after about one year of close lateral internal sphincterotomy. No patient needed readmission during follow-up period.

Sentinel pile in which cases it was present was also removed with out any significant difference in results.

DISCUSSION

This study has shown the significant reduction in post-operative pain score with a P value of <0.0001 when compared with pre operatively. Similarly, post-operatively bleeding per rectum decreased significantly as indicated by P value less than 0.0001. Incontinence to flatus was found to be around 3.3% at 6 week that was transient as it improved after about 10 weeks. Only two patients had wound infection that also settled with conservative treatment. And the recurrence rate was also very low as only two patients presented after one year of CLIS with recurrence. From the above mentioned results it can be concluded that CLIS is a safe and reliable procedure in patients with chronic anal fissure as it has a better outcome in terms of better healing and fewer complications.

CLIS have high rates of anal fissure healing with a low recurrence rate⁸⁻¹⁵. Lord's procedure also known to have good healing rate but as it is not a controlled procedure and it varies from person to person, the degree of force applied that can result in to unwanted fracture of the internal as well as external anal sphincter. Therefore it has significantly high risk of minor incontinence as compare to sphincterotomy¹² (12.5% to 24.3% after anal stretch versus 4.8% after lateral internal sphincterotomy)^{8,9,13}. Presence of persistant fissure has also been noted down in significant number of patient underwent anal dilatation.^{9,12} A combined method using old technique of manual dilatation followed by radio surgery is found to be useful also for refreshing fissure edges and to deal related pathologies such as sentinel pile, small internal piles or hypertrophied anal papillae¹⁶. But it is not cost effective and is a time consuming procedure.

In addition to pain, chronic anal fissure influences psychological, social and physical well-being of the effected individuals. LIS not only eliminates anal pain, but it also restores many aspect of quality of life¹².

Lateral internal sphincterotomy is gaining its well reputed and being recommended as gold standard because of increased success rates and minimal complications^{3,14,15}. It has been shown in many studies that there were no significant differences in pain scores or in incontinence rate when compared between open and closed internal sphincterotomy^{11,15,17}. Although the postoperative pain score was higher in open technique and it has also been suggested that open sphincterotomies are longer than closed ones that explain having a higher risk of incontinence than the closed technique.^{11,12, 18} Morbidity and recurrence rate are comparable with either technique, performed either under local anesthesia or general anesthesia and also has several socioeconomic advantages.^{10- 17} In anal fissure, healing time ranges roughly from 4 to 12 weeks¹⁷.

In present study fissure healing was present in approximately 116 (96.7%) patients at 6 weeks after CLIS. Recurrence rate for lateral internal sphincterotomy ranges from 1.3 to 13.1% in some international studies while in present study it was 1.67%^{15,16}.

In present study there was adequate pain relief in 82 (68.3%) patients after about 24 hours of surgery. Rest of the 32(26.66%) patients were discharged with mild pain and 6 (5%) patients were discharged with moderate pain while at admission 78 (65%) patients presented with severe pain. This shows quick pain relief in majority of the patients which is also supported by other studies.^{12,14-18}

The overall risk of postoperative incontinence was seen 10% according to a systematic review of randomized surgical trials and this was mostly incontinence to flatus that was transient^{11,18}. Flatus incontinence was only transient in CLIS. At 3 weeks 8 patients (6.7%) had flatus incontinence which was reduced to 4 (3.3%) at 6 weeks. Arroyo et al showed progressive decrease in flatus incontinence in their study. Flatus incontinence was 7.5% at 02 months and it decreased to 5% at 6 months¹. That is comparable with preset study. In one local study flatus incontinence was found in 6.6% of patients.⁹In present study, fissure location was mostly posterior midline (88.3%). In another study, fissure was present in posterior midline in 71.4% cases⁶. This is comparable to the traditional text book teachings about the location of the anal fissure.

Finally the results of present study showed higher success rate in close lateral internal sphincterotomy as far as healing was concerned. The complications were significantly low as no major septic complication or significant recurrence was observed with out any demarcation of age and gender.

CONCLUSION AND RECOMMENDATIONS

Chronic anal fissure is a common painful condition and most of the time easy to diagnose. Close lateral internal sphincterotomy is found to be very effective and safe method in patients with chronic anal fissure. It has excellent success rate in terms of fissure healing and relief of pain. It has very low complication and recurrence rate so it is very cost effective in long term as well.

On the basis of this study it is recommended that chronic anal fissure, that do not respond to medical treatment should be treated with Close Lateral Internal Sphincterotomy.

REFERENCES

1. Arroyo A, Pérez F, Serrano P, Candela F, Lacueva J, Calpena R. Surgical versus chemical (botulinum toxin) sphincterotomy for chronic anal fissure: long-term results of a prospective randomized clinical and manometric study. *Am J Surg.* 2005;189(4):429-34.
2. Ebinger SM, Hardt J, Warschkow R, Schmied BM, Herold A, Post S, Marti L. Operative and medical treatment of chronic anal fissures-a review and network meta-analysis of

- randomized controlled trials. *J. Gastroenterol.* 2017 Jun;52(6):663-676
3. Collins EE, Lund JN. A review of chronic anal fissure management. *Tech Coloproctol.* 2007;11(3):209-23..
4. Mapel DW, Schum M, Von Worley A. The epidemiology and treatment of anal fissures in a population-based cohort. *BMC Gastroenterol.* 2014 Jul 16;14:129.
5. Keshtgar AS, Ward HC, Sanei A, Clayden GS. Botulinum toxin, a new treatment modality for chronic idiopathic constipation in children: long-term follow-up of a double-blind randomized trial. *J Pediatr Surg.* 2007;42(4):672-80.
6. Brunicaudi F C et al Swartz principal of Surgery 8th Edition McGraw-Hill New York 2005
7. Essani R, Sarkisyan G, Beart RW, Ault G, Vukasin P, Kaiser AM. Cost-saving effect of treatment algorithm for chronic anal fissure: a prospective analysis. *J Gastrointest Surg.* 2005;9(9):1237-43.
8. Anandaravi BN, Ramaswami B. Closed versus open lateral internal anal sphincterotomy in a chronic anal fissure. *Int. Surg. J* 2017;4:1055-8
9. ShafiqUllah, NadeemM. Closed versus open lateral internal sphincterotomy in chronic anal fissure: a comparative study of postoperative complications & results. *Pak J Med Res,* 2004;43(1):1-4.
10. Knight JS, Birks M, Farouk R. Topical diltiazem ointment in the treatment of chronic anal fissure. *Br J Surg.* 2001;88(4):553-6.
11. Sajid MS, Vijaynagar B, Desai M, Cheek E, Baig MK. . Botulinum toxin vs glyceryltrinitrate for the medical management of chronic anal fissure: a meta-analysis. *Colorectal Dis.* 2008;10(6):541-6. Epub 2007 Sep 13 .
12. Tranqui P, Trottier DC, Victor C, Freeman JB. Nonsurgical treatment of chronic anal fissure: nitroglycerin and dilatation versus nifedipine and botulinum toxin. *Can J Surg.* 2006;49(1):41-5.
13. Ram E, Vishne T, Lerner I, Dreznik Z. Anal dilatation versus left lateral sphincterotomy for chronic anal fissure: a prospective randomized study. *Tech Coloproctol.* 2007 Dec 3.
14. Leong AF, Seow-Choen F. Lateral sphincterotomy compared with anal advancement flap for chronic anal fissure. *Dis Colon Rectum.* 1995;38(1):69-71.
15. Jensen SL, Lund F, Nielsen OV, Tange G. Lateral subcutaneous sphincterotomy versus anal dilatation in the treatment of fissure in ano in outpatients: a prospective randomised study. *Br Med J (Clin Res Ed).* 1984;289(6444):528-30.
16. Engel AF, Eijsbouts QA, Balk AG. Fissurectomy and isosorbidedinitrate for chronic fissure in ano not responding to conservative treatment. *Br J Surg.* 2002;89(1):79-83.
17. Arroyo A, Pérez F, Serrano P, Candela F, Calpena R. Open versus closed lateral sphincterotomy performed as an outpatient procedure under local anesthesia for chronic anal fissure: prospective randomized study of clinical and manometric longterm results. *J Am Coll Surg.* 2004;199(3):361-7.
18. Ozole I, Furn R. Gray's Anatomy ELSEVIER CHURCHILL LIVINGSTONE 39th edition, 2005;84:1205-1211