

The Outcome of Closed Lateral Internal Sphincterotomy for the Chronic Anal Fissure

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The aims and objectives of the study are to determine the efficacy of closed lateral internal sphincterotomy to relieve symptoms of chronic anal fissure and postoperative complications of procedure. The study was conducted at Surgical Department, Sir Ganga Ram Hospital, Lahore over a period of two years from April, 2001 to Feb., 2003. The first 100 consecutive patients of either sex irrespective of age were included in this study. All these patients were with symptomatic anal fissure, with failed medical treatment and long history. All these patients were operated under spinal and general anaesthesia in lithotomy position. Digital examination and proctoscopic examination was done. Among 100 patients 56 patients (56%) were free of pain within 24 hours and 42 patients (42%) had no pain after 48 hours. Two patients (2%) complained of persistent moderate to severe pain. Among 100 patients 6 patients (6%) had haemorrhage with soakage of gauze piece but there was no active bleeding. Only oozing was detected. Two patients (2%) had haematoma at operative site. Four patients (4%) C/o impaired control for flatus and soiling of underwear but these recovered within hospital stay. Closed internal sphincterotomy is a procedure of choice for chronic anal fissure. It is minimally invasive procedure. Postoperative discomfort is of shorter duration, wound heals quickly and recurrence is uncommon.

Key word: Closed lateral sphincterotomy, chronic anal fissure.

An anal fissure is a painful longitudinal ulcer in the skin of anal canal extending from just below dentate line to the margin of anus. Fissure occurs at any age but is most common in young and middle-aged adults. The posterior midline is the site of 98% of fissures in men and 90% of those in woman¹.

The exact cause is unknown, but many factors like passage of large, hard stools, inappropriate diet, previous anal procedure, prolonged labour and laxative abuse are blamed. Numerous authors have documented a higher than normal resting anal pressure¹. In patients with Fissure-In-Ano, the normal reflex relaxation of the internal sphincter is followed by an abnormal "over shoot" contraction. The most important factor explaining the predilection for the posterior midline is the relatively deficient anodermal blood flow owing to its relatively high resting anal pressure. Thus chronic anal fissures may be ischemic ulcers².

Chronic fissure has a characteristic triad: comprising (1) the fissure itself; (2) a hypertrophic anal papilla at the upper end of the fissure; and (3) a sentinel pile or tag of skin at the lower end of anal verge. The diagnosis is secured by cardinal symptoms of pain during and after defecation, especially if associated with prior constipation. It is confirmed by inspection after gently parting the posterior anus, preferably after anaesthetising the anus with local application of anaesthetic agent. Definitive diagnosis is made by examination under general anaesthesia or regional block.

Acute fissures may heal in 4 to 8 weeks on a conservative regimen of bulk agent, sitz baths and emollient suppositories. Topical 2% nitroglycerine ointment may also afford dramatic relief of pain³. Medical treatment has limited role in chronic anal fissure. A

number of surgical procedures like anal sphincter stretch, dorsal internal anal sphincterotomy, closed or open lateral internal anal sphincterotomy have been recommended for treating chronic anal fissure but closed lateral internal sphincterotomy has emerged as most favoured choice. The fissure heals in 1-4 weeks and remains healed over long term in 95% patients⁴.

Patients and methods

The study was conducted at the Department of Surgery, Sir Ganga Ram Hospital, Lahore. Over a period of two years from April, 2001 to Feb., 2003. The first 100 consecutive patients of either sex irrespective of age were included in this study. All these patients were with symptomatic anal fissure, with failed medical treatment and had long history. Patients with acute fissure, anal sepsis, anal trauma, previous anal surgery, fistula in ano, prolapsed haemorrhoids were excluded from study.

Detailed examination was carried out which included general physical and systemic examination. Local examination of anus and perianal area was carried out by separating buttocks gently to look for fissure sentinel piles, external haemorrhoids, condylomata, fistula and sinus. Per rectal examination was very painful to the patients and not performed. For all patients, routine investigations like blood complete examination, urine examination, X-ray chest, BUN, Serum Creatinine, BSR and ECG if patient was above 40 years of age were done.

All these patients were operated under general and spinal anaesthesia in lithotomy position. Digital examination and proctoscopic examination was done for anal tone, site of fissure presence of papilla and any other pathology. Goligher's retractor was used to stretch the anus enabling the localization of lower border of internal

sphincter. No 11 surgical blade was passed under the anal mucosa at 3'o or 9'o clock position and anal sphincter divided laterally. Anal tone was reassessed at the end of procedure. In all cases sentinel pile was excised. Wound was packed with lignocaine gel soaked gauze piece and T Bandage was applied.

Postoperatively patients were monitored for analgesic requirements, bleeding, haematoma, discharge, soiling of under clothings and any other complication. Most of patients were discharged on 2nd postoperative day with instruction like sitz bath for few days and noting down any complication like discharge and incontinence.

Results

Out of 100 patients, 52(52%) were male patients and 48(48%) were female patients. Male to female ratio was 1:92. The mean age of patients was 34.46 years (20 – 60). Among 100 patients, 46% presented with complaints of painful defecation and occasional bleeding per rectum, 30% with complaints of painful defecation alone, 24% presented with complaints of pruritis, discharge and painful defecation. (Table 1).

Table 1. Common presenting complaints (n=100)

Common Presenting Complaints	n=	%age
Painful defecation with occasional bleeding per-rectum	46	46
Painful defecation with Pruritis and discharge	30	30
Painful defecation alone	24	24

For regarding duration of complaints, 42 patients (42%) had complaints for 2-3 months, 10% for 4-6 months, 26% had complaints for 7 months–1 year, 14% patients had complaints for 1 to 5 years (Table 2).

Table 2. Duration of complaints

Duration	n=	Male	Female
2-3 months	42 (42%)	16(30.76%)	26(54.16%)
4-6 months	20(20%)	14(26.92%)	6(12.5%)
7 months 1 year	24(24%)	14(26.92%)	10(20.08%)
1 year –5 years	14(14%)	8(15.38%)	6(12.5%)

In this study, 10% had anterior midline fissure and 88% had posterior midline fissure and 2% had both anterior and posterior midline fissure. No patient had fissure at unusual site. 72 patients (72%) had no other anorectal pathology and 28 patients (28%) had 1st or 2nd degree primary haemorrhoids along with chronic Fissure-in-ano. Among 100 patients in this study group 68(68%) had sentinel pile.

Among 100 patients 56 patients (56%) were free of pain within 24 hours postoperatively and 42 patients (42%) had no pain after 48 hours. Two patients (2%) complained of persistent moderate to severe pain. Among 100 patients 6 patients (6%) had haemorrhage with soakage of gauze piece but there was no active bleeding. Only oozing was detected. Two patients (2%) had haematoma at operative site. Four patients (4%) C/o impaired control for flatus and soiling of undergarments immediately after closed lateral

sphincterotomy during hospital stay but free of these complaints at the time of discharge. (Table 3).

Table 3. Complication after closed lateral internal sphincterotomy

	n=	Male	Female
Hemorrhage	6(6%)	2(3.84%)	4(8.33%)
Haematoma or echymosis	2(2%)	2(3.84%)	0
Impaired control of flatus and faces	4(4%)	2(3.84%)	2(3.84%)

Majority of patients i.e. 92 patients (92%) stayed in hospital for 1-2 days, 6 patients (6%) stayed in hospital for 3 to 4 days, one patient (2% stayed in hospital for 6 days.

In 98 patients (98%) at fissure healed and anal tone was normal during follow up postoperatively was found in these patients. These had good normal control for flatus and feces. Among 100 patients, 98 patients were well satisfied with method of treatment. Four patients (2%) who had complications, healing attempt was noted at 4th week follow-up and they were almost free of pain (Table 4)

Table 4. Treatment success assessed at the end of 4 weeks follow-up for closed lateral internal sphincterotomy

	n=	Male	Female
Fissure healed	98(98%)	50(96.15%)	48(100%)
Fissure Unhealed	2(2%)	2(3.84%)	0(0%)
Continenence for flatus and faeces	98(98%)	50(96.15%)	48(100%)
Fecal soiling	2(2%)	2(3.84%)	0(0%)
Patient satisfaction	98(98%)	50(96.15%)	48(100%)

Discussion

Anal fissure is a common and distressing problem which is associated with pain and bleeding on defecation. Several studies have shown that resting anal pressure (internal sphincter hypertonia) is raised in patients with chronic anal fissure⁵.

The conventional surgical approach to chronic anal fissure is anal dilatation or internal sphincterotomy. Digital dilatation of the anus (DDA) can causes severe sphincteric damage⁶. Manometric and endoanal ultrasonographic studies have documented the injuries in patients referred to tertiary referral center⁷. Closed lateral internal sphincterotomy, which decreases resting anal sphincter pressure, has been the most favoured surgical procedure for healing chronic anal fissure⁸.

Many studies reveal that cardinal symptoms of anal fissure is pain in anus during and after defecation, bleeding per-rectum is very common but is not always present⁹. The study shows overall 88% had posterior midline fissure, 10% had anterior midline fissure and 2% had both anterior and posterior midline fissure. In Literature, it has been described that in male: 95% Fissure are close to posterior midline, 5% near to anterior midline, whereas in female: 80% are located posteriorly and 20% anteriorly.¹⁰ In our study group 68% of patients had a sentinel pile while 32% had no sentinel pile. In literature, it is stated that some patients having a large sentinel pile usually complain of a painful external hemorrhoid¹¹.

In the present study, all patients had increased internal sphincter tone assessed by digital rectal examination preoperatively. This is in accordance with all studies undertaken on patients with chronic anal fissure assessed by anal manometry which showed that resting anal pressure is markedly increased in chronic anal fissure. Furthermore, an abnormal anorectal inhibitory reflex and a longer higher pressure zone have been noted in patients with chronic anal fissure¹². Choweat, Arango and Boulos¹³ found that after lateral internal sphincterotomy the pressure dropped by 50% to normal levels and fissure healed with no change over a 12 months follow-up.

In our study overall 56% of patients were free of pain within 24 hours after closed lateral internal sphincterotomy and 42% felt pain relief within 48 hours after procedure Gordon¹¹ in review of 133 patients undergoing closed lateral internal sphincterotomy showed that most had relief within 48 hours and many within 24 hours. The postoperative haemorrhage from wound site was noted in 6% of patients which was stopped afterwards with pressure gauze packing without active intervention. Lewis et al¹⁴ had no haemorrhage in any of his patients out of 350 patients undergoing closed internal sphincterotomy in his study group.

Regarding functional results of closed lateral internal sphincterotomy in our study temporary minor impairment of control like fecal soiling was noted in 4 patients (4%). In a retrospective study by Garcia-Aguilar et al¹⁵ comparing open and closed lateral internal sphincterotomy, a statically significant difference was noted for soiling of undergarments (26.7%) open versus 16.1% closed ($p < 0.001$).

Reported postoperative incidence of incontinence to feces and flatus is remarkably variable (0-35%). Fraser¹⁶ found in his study multiple factors (e.g. multiparity, age, constipation and previous surgery) responsible for this. Marby et al¹⁷ has reported that no patient had incontinence to flatus or feces in their study.

In our study 98% of patients had complete healing within 4 weeks. A wide variation in the results has been reported with recurrence (unhealed fissures) from 0% to 15% after closed lateral internal sphincterotomy.¹⁸ Approximately 98% of chronic anal fissure heal following lateral internal sphincterotomy as demonstrated by Rober-D-Fry¹⁰. Limited division of internal anal sphincter as demonstrated by endoanal ultrasonography cause recurrence (unhealed fissure) after closed lateral internal sphincterotomy¹⁹.

Ninety eight percent (98%) of patients were pleased with procedure in this study. In a study undertaken by Pernikoff²⁰ a retrospective review of patients undergoing closed lateral internal sphincterotomy for chronic anal fissure, revealed 98% patients satisfaction with the results of procedure. Usatoff et al²¹ reviewing 98 patients undergoing lateral internal sphincterotomy and for its long

term results revealed that 90% of patients were moderately or very pleased with outcome.

Closed internal sphincterotomy is a procedure of choice for chronic anal fissure. It is minimally invasive procedure. Postoperative discomfort is of shorter duration, wound heals quickly and recurrence is uncommon.

References

1. Timmcke AE, Hicks TC. Fissure-In-Ano. In: Shackelford's Surgery of the Alimentary tract, colon. 4th edition. 1992:322.
2. Schonten WR, Brile JW. Relationship between anal pressure and anodermal blood flow. The vascular pathogenesis of anal fissure. *Diseases Colon Rectum* 1994; 34:664.
3. Carpeti EA, Kamm MA, McDonald PJ, Chadnmic SJD. Randomised controlled trail shows that glyceryltrinitrate heals anal fissures, higher does are not more effective, and there is recurrence rate. *GUT* 1999; 44:727-30.
4. Gordon PH. Fissure-In-Ano. In: Gordon PH, Nivatongs S. Principles and practice of surgery for the colon, rectum and anus. St Louis. Quality Medical Publishing. 1992: 199-217.
5. Farouk R, Duttic GS, MacGregor AB, Bartolo DC. Sustained internal sphincter hypertonia in patients with chronic anal fissure. *Dis Colon Rectum* 1994; 37:424-29.
6. MacDonald A, Smith A, McNeil AD, Finley JG. Manual dilatation of anus. *Br J Surg* 1992; 79:1381-82.
7. Sparkman CT, Burnet SJ, Kamm MA, Bartman CI. Sphincter injury after anal dilatation demonstrated by anal endosonography. *Br J Surg* 1991; 78:1429-30.
8. Gorgiomasia, Guispe Brinda et al Influence of botulinum toxin site of injection on healing rate in patients chronic anal fissure. *Am J Surg* 2000; 179:46-49.
9. Philip H Gordon. Fissure-In-Ano. Principles and practice of surgery for the colon, rectum and ano. 1992: 202-17.
10. Keck JO, Stanianas RJ et al. Computer generated profiles of anal canal in patients with anal fissure. *Dis Colon Rectum* 1995; 38:72.
11. Choweat NL, Arango JGC, Boulos PB. Lateral internal sphincterotomy for chronic anal fissure: long term effects on anal fissure. *Br J Surg* 1986; 73:915-16.
12. Gerdan EJ, deLion AR, Azpiroz F. Anal sphincteric pressure in Fissure-in-Ano before and after lateral internal sphincterotomy. *Dis Colon Rectum* 1982; 25: 198-201
13. Lewis TH, Corman ML, Prager ED, Rosertson WS. Longterm results of open and closed sphincterotomy for anal fissure. *Dis Colon Rectum* 1988; 31: 368-71
14. Garcia Aguilar J, Belmonte C, Wong WD et al. Open Vs closed sphincterotomy for chronic anal fissure: long term results. *Dis Colon Rectum* 1996; 39: 440-43
15. Magee HR, Thompson HR. Internal anal sphincterotomy as an outpatient operation. *GUT* 1966; 7: 190-93
16. Fraser R Sharp. Patient selection and treatment modalities for chronic anal fissure. *Am J Surg* 1996; 171: 512-15
17. Marby M, Allexander, Williams J, Buduan P et al. A randomized controlled trail to compare trail to compare anal dilatation with lateral subcutaneous sphincterotomy for anal fissure. *Dis Colon Rectum* 1979; 22: 308-11
18. Jensen SL, Lund F, Nielson OV, Tang G. Lateral subcutaneous sphincterotomy versus anal dilatation in the treatment of Fissure-In-Ano in out patients: A prospective randomized study. *Br Med J* 1984;289:528-30
19. Farouk R, Moson JRT, Duttric GS. Technical failure of lateral sphincterotomy for treatment of chronic anal fissure: a study using endoanal USG. *Br J Surg* 1997;84:84-85
20. Perinkoff BJ, Esenstat TE, Rubin RJ, Oliver GC, Salvatiil EP. Reappraisal of partial lateral internal sphincterotomy. *Dis Clon Rectum* 1994; 37: 1291-95
21. Usatoff V, Polglase AL. The long term results of internal anal sphincterotomy for anal fissure. *Aust N Z J Surg* 1995;65: 576-78