Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06 UGC approved journal no. 63854

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Lateral Internal Sphincterotomy versus Anal Dilatation in Chronic Anal Fissure: A comparative study

Lokesh Kumar

Assistant Professor, Department of General Surgery, Rajshree Medical Research Institute, Bareilly, Uttar Pradesh, India

ABSTRACT:

Aim: To compare the lateral internal sphincterotomy versus anal dilatation in chronic anal fissure. **Methods:** After receiving ethical approval from the institution, the research was carried out at the department of General Surgery. This research comprised 100 patients aged 20 to 52 years, with CAF and failed medical treatment. All of the patients were separated into two groups of 50 each. CAF was characterised as an anal ache for 8 weeks with induration of the borders of the fissure and exposure of the fibres of the internal sphincter in the floor of the fissure with sentinel tag. **Results:** The LIS group had considerably fewer patients with the highest pain level at 24 hours after surgery than the LAD group (p value-0.02, or 6.5, 95 percent CI- 1.58-21.87). However, there was no significant difference in pain scores between the two groups were examined later, i.e. before discharge, one month, three months, and six months (p values- 0.72, 0.77, and 0.47). 40 (80%) of the LAD group and 44 (88%) of the LIS group had bleeding in the first 24 hours after surgery, which was clinically insignificant and diminished in future days, but was not determined to be statistically significant (p value 0.34) The average post-operative hospital stay in the LAD group and the LIS group is 3.5 days and 3.7 days, respectively. After three months of therapy, full healing was reported in 47 patients and incomplete in the remaining three patients in the LAD group, while complete healing was observed in 48 patients and incomplete in two patients in the LIS group. **Conclusions:** With only a minor difference in pain and Lord's dilatation compared to sphincterotomy, and no findings of incontinence or situations resulting in sphincter damage, we conclude that LAD is appropriate for patients with chronic anal fissures because it is less invasive than LIS and has equivalent efficacy and safety.

Keywords: Chronic anal fissure, lords anal dilatation, lateral internal sphincterotomy, postoperative complications

Received: 13 April, 2019 Accepted: 16 May 2019

Corresponding author: Lokesh Kumar, Assistant Professor, Department of General Surgery, Rajshree Medical Research Institute, Bareilly, Uttar Pradesh, India

This article may be cited as: Kumar L. Lateral Internal Sphincterotomy versus Anal Dilatation in Chronic Anal Fissure: A comparative study. J Adv Med Dent Scie Res 2019;7(6): 174-177.

INTRODUCTION

An anal fissure is a linear anoderm ulcer distal to the dentate line. It is usually seen in the midline of the posterior anoderm. [1] An anal fissure that is less than 6 weeks old is termed acute. Chronic means that it lasts longer than six weeks. Furthermore, chronic anal fissures may be linked with sentinel piles, hypertrophied anal papillae, or visible internal sphincter fibres. [2-4]Though its frequency in our environment is unknown, chronic anal fissure is fairly prevalent in day-to-day clinical practise. According to manometric studies, most chronic anal fissures are linked with increased internal anal sphincter pressure and decreased blood flow at the base. [5,6] This causes anoderm ischemia, which predisposes to chronicity or recurrence of ulcer. Based on this discovery, most modern treatment approaches concentrate on lowering resting anal pressure by decreasing sphincter tone and enhancing blood flow at the location of the fissure, hence increasing the pace of ulcer healing. [7] There are many therapy options for chronic anal fissure (CAF), but no agreement has been achieved on the optimal treatment strategy. Conservative therapy may cure the ulcers without putting the patient at danger of incontinence. However, recurrence is typical in these patient populations. As a result, most surgeons favour surgical therapy in CAF since it speeds up ulcer healing and reduces recurrence. [8,9] However, incontinence is a major issue. The most common surgical procedures for the treatment of CAF are anal dilatation (AD) and lateral internal sphincterotomy (LIS). Many surgeons believe that LIS is preferable than AD. [9-11] AD has been chastised for recurrence

rates ranging from 2% to 80%, and incontinence rates of up to 51%. However, proponents of AD argue that when conducted correctly and carefully, it leads in considerable success rates. [12]

MATERIAL AND METHODS

After receiving ethical approval from the institution, the research was carried out at the department of General Surgery. This research comprised 100 patients aged 20 to 52 years, with CAF and failed medical treatment. The research excluded patients with inflammatory bowel illness, AIDS, TB, sexually transmitted infections, pregnancy/puerperium, and any prior anorectal surgery. All of the patients were separated into two groups of 50 each. CAF was characterised as an anal ache for ≥8 weeks with induration of the borders of the fissure and exposure of the fibres of the internal sphincter in the floor of the fissure with sentinel tag.[13]

METHODOLOGY

After clearance from the hospital ethics committee, written informed permission was acquired in the patient's native language. On standardisedproforma, the patient's specifics, clinical data, and examination results were documented. The Wong-baker facial pain rating scale was used to assess pre- and post-operative pain. [14] The modified Longo score was used to assess constipation.[15]Wexner's scoring method was used to assess incontinence. [16]

SURGICAL TECHNIQUE

As prophylactic antibiotics, second generation cephalosporin and metronidazole were given in stat dosages before to surgery. Both surgeries were performed under spinal anaesthesia, with the patient in the lithotomy position. After disinfecting the surgical field with Povidone-iodine, the field was draped.

LORD'S ANAL DILATATION

Watts et al.[17] reported anal dilatation in detail. To validate clinical observations and rule out alternative sources of bleeding, a digital rectal examination and proctoscopy were conducted first. Following that, a thoroughly lubricated index finger of the right hand was entered, and a constriction band that corresponded to the anorectal line was palpated. After palpating the constriction band, each hand's well lubricated index finger was placed into the anal canal and mild outward pressure was given continuously until the restriction was overcome. During this operation, the hand was moved all over to relax the whole portion. The treatment was halted until the anal canal had softened enough to take four fingers (two from each hand) without considerable strain.

LATERAL INTERNAL SPHINCTEROTOMY

A digital rectal examination was performed first, followed by a proctoscopy. The tight distal internal sphincter was palpated as a tight band inside the canal during proctoscopy with a bivalve kind of anal speculum. The intersphincteric groove was palpated, which represents the distal end of the internal sphincter. A Vongraefe knife was introduced through the perianal skin at the left lateral aspect of the canal sandwiched parallel between the anodermand the internal sphincter; when the tip reached the dentate line, the blade was turned outwards and the internal sphincter muscle divided with the blade until the give way feeling was appreciated; this give marked that fibres had been divided, and this ended the sphincterotomy; the blade was then removed, and gentle pressure was applied If there was a skin tag, it was removed.

MANAGEMENT AFTER SURGERY

After surgery, the patient was given oral second-generation cephalosporin and metronidazole for three days before being given oral pills for one week. Injectable NSAIDs were given the same evening, and oral NSAIDs were begun the next day.

After six hours following surgery, patients were able to start eating. Vomiting and laxatives were prescribed from the first postoperative day and were to be maintained for one week.

Patients were released on the third post-operative day, and any delay, as well as the cause for it, was documented. Patients were first observed in the surgical OPD on a weekly basis for four weeks to identify any consequences of the surgery (pain, incontinence, abscess development, hematoma, recurrence). They were then followed up with monthly phone calls and, if necessary, assessed in further OPDs in the third and sixth months.

RESULTS

The majority of the population (68 percent) was female, with a male to female ratio of 2.12:1. The whole study population had a mean age of 35.25±10.55 years.

Table 1 Gender and age distribution

Gender	Number	%
Male	32	32
Female	68	68
Age in years		
20-30	14	14
30-40	54	54
40-50	17	17

above 50	15	15
Mean age	35.25±10.55	

Post-operative symptoms included discomfort, rectum bleeding, mucous discharge, and incontinence. Table 1 shows a comparison of pain ratings at various times of examination. The LIS group had considerably fewer patients with the highest pain level at 24 hours after surgery than the LAD group (p value-0.02, or 6.5, 95 percent CI-1.58-21.87). However, there was no significant difference in pain scores between the two groups were examined later, i.e. before discharge, one month, three months, and six months (p values- 0.72, 0.77, and 0.47).

Table 2: Comparison between pain scores.

Follow-up time/ max pain score	LAD	LIS	Odds ratio (95% CI)	p value
24 hours/V	48	38	6.5 (1.58-21.87)	0.02
Before discharge/IV	35	45	0.52 (0.17-1.32)	0.15
1st month/I	12	13	0.88 (0.32-2.11)	0.72
3rd month/I	7	8	1.3 (0.51-3.52)	0.77
6th month/I	3	4	0.71 (0.14-2.65)	0.47

n= Number of patients with the maximum pain score in LAD group (n1*) and LIS group (n2**)

Table 2 compares the number of patients who had post-operative bleeding per rectum. 40 (80%) of the LAD group and 44 (88%) of the LIS group had bleeding in the first 24 hours after surgery, which was clinically insignificant and diminished in following days, and was not determined to be statistically significant (p value 0.34).

Table 3: Comparison of post-operative bleeding.

	LAD	LIS	Odds ratio (95% CI)	p value
24 hours	40	44	0.62 (0.2394-1.6302)	0.34
Before discharge	27	24	1.21 (0.66-3.78)	0.58
1st month	7	8	0.79 (0.32-3.96)	0.68
3rd month	4	2	4.14 (0.42-32.22)	0.42
6th month	3	1	3.05 (0.21-24.32)	0.61

Mucous discharge was found in 12 patients (24%) in the LAD group, which cleared within weeks but persisted in 3 patients (6%) for one month; in the LIS group, it was present in 4 patients (8%) and lasted in 1 patient for one month (2 percent). The difference was statistically insignificant in both instances at the time of discharge and after one month of therapy, with p values of 0.21 and 0.54, respectively. The average post-operative hospital stay in the LAD group and the LIS group is 3.5 days and 3.7 days, respectively. After three months of therapy, full healing was reported in 47 patients and incomplete in the remaining three patients in the LAD group, while complete healing was observed in 48 patients and incomplete in two patients in the LIS group. The difference in wound healing was statistically insignificant (p value 0.58, or 2.05, 95 percent CI 0.18-24.27). Recurrence was seen in three patients (6%) in the LAD group and one patient (2%) in the LIS group. Again, this was statistically insignificant (p value 0.58).

Table-4: After 3 months LAD and LIS

	LAD	LIS
Complete healing	47	48
Recurrence	3	1
hospital stay in days	3.5	3.5

DISCUSSION

Internal sphincter spasm is an established factor in the pathophysiology of anal fissures, which is a painful ulceration of the anal canal mucosa caused by the traumatic impact of hard and big faeces that develops subsequent to constipation. It is well acknowledged that ischemia episodes contribute to poor healing and the recurrence of anal fissures. Reduce the anal canal resting pressure and alleviate discomfort in individuals with anal fissure, anal dilatation, LIS, or successful medicinal therapy. [18,19]Our findings back with previous research on incontinence and recurrence rates, pain alleviation, patient satisfaction, and healing. In this research, LAD and LIS had comparable post-operative discomfort, complications, and recurrence rates. The male to female ratio in this research (2.12:1) is similar to previous studies such as Nahas et al. (2.3: 1) and Gupta V et al (1.4:1) [20], According to the findings of Mapel et al., the most common presenting

symptom in this research was discomfort, followed by concomitant rectum haemorrhage and constipation.[21, 22] On inspection, the most frequent finding was a posterior anal fissure (6 O' Clock), followed by an anterior (12 O' Clock) and mixed. These findings were consistent with earlier research findings.[23]In this research, the pain score in the first 24 hours was considerably greater in the LAD group than in the LIS group, which might be attributed to inter-individual differences in the application of force during anal dilatation intra-operatively. This discrepancy was eliminated in the following days, and the difference at the time of discharge was insignificant. Incontinence is one of the consequences of anal canal surgery. In this research, the author had similar incidents, although they were only transitory and decreased with time. After three months, full healing occurred in 96-98 percent of cases in both groups, which was consistent with prior studies done by Gupta V et al. [21,21]According to Arroyo et al.[24] the recurrence rate in this trial was 2-6 percent, which was statistically insignificant but remained greater in the LAD group.

CONCLUSIONS

With only a minor difference in pain and Lord's dilatation compared to sphincterotomy, and no findings of incontinence or situations resulting in sphincter damage, we conclude that LAD is appropriate for patients with chronic anal fissures because it is less invasive than LIS and has equivalent efficacy and safety.

REFERENCES

1. Lund JN, Scholefield JH. Aetiology and treatment of anal fissure. Br J Surg.1996; 83:1335-1344.
2. American Gastroenterology Association. American gastroenterological association medical position statement: diagnosis and care of patients with anal fissure. Gastroenterology.2003;124:233–234.
3. Collins EE, Lund N. A review of chronic anal fissure management. Tech Coloproctol J. 2007;11:209-223 8.
4. Lindsey I, Jones OM, Cunningham C, et al. Chronic anal fissure. Br J Surg.2004;91:270-279.
5. Schouten WR, Briel JW, Auwerda JJ. Relationship between anal pressure and anodermal blood flow. Dis Colon Rectum.1994;37:664–669 24.
6. Schouten WR, Briel JW, Auwerda JJ, etal.Ischaemic nature of anal fissure. Br J Surg.1996;83:63–65.
7. Bhardwaj R, Parker MC. Modern perspectives in the treatment of chronic anal fissures. Ann R CollSurg Engl. 2007;89: 472–478.
8. Steele SR, Madoff RD. Systematic review: the treatment of anal fissure. Aliment PharmacolTher.2006;24:247–257.
9. Vaithianathan R, Panneerselvam S. Randomised Prospective Controlled Trial of Topical 2 % Diltiazem Versus Lateral Internal Sphincterotomy for the Treatment of Chronic Fissure in Ano. Indian J Surg. 2015; 77(3):1484-1487.
10. 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;December 3 .
11. Nelson RL. Operative procedures for fissure in ano. Cochrane Database Syst Rev. 2010;1:CD002199.
12. Speakman CT, Burnett SJ, Kamm MA, Bartram CI. Sphincter injury after anal dilatation demonstrated by anal endosonography.BrJSurg. 1991;78(12):1429-30.
13. Sanabani JA, Salami SA. Closed versus open lateral internal anal sphincterotomy for chronic anal fissure in female patients. Egyptian J Surg. 2014; 33:178-81.
14. Wong DL, Hockenberry-Eaton M, Wilson D, Winkelstein ML, Schwartz P. Wong's Essential of Pediatric Nursing, 6thEd. St. Louis, Mosby, 2001.
15. Longo A. Obstructed defecation because of rectal pathologies. Novel surgical treatment: stapled transanal rectal resection (STARR). Annual Cleveland Clinic Florida Colorectal Disease Symposium, 2004.
16. Jorge JMN, Wexner SD. Etiology and management of fecal incontinence. Dis Colon Rectum. 1993; 36:77-97.
17. Watts JM, Bennett RC, Goligher JC. Stretching of the anal sphincters in the treatment of fissure-in-ano. Br Med. 1965, 342-4.
18. Hancke E, Schwaner S. Chronischeanalfissur – operative behandlungmitanaldilatation, excision der analfissur versus lateralesphinkterotomie.Colo-proctology 2003;25(2):95–105.
19. Melange M, Colin JF, Van Wymersch T. Anal fissure: Correlation betweensymptoms and manometry before and after surgery.Int J Colorectal Dis 1992;7(2):108–11.
20. 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
21. Nahas SC, SobradoJr CW, Araujo SE, Aisaaka AA, Habar GA, Pinotti HW. Chronic anal fissure: results of the treatment of 220 patients. Rev HospClinFac Med. 1997; 52:246-9
22. Mapel DW, Schum M, Worley AV. The epidemiology and treatment of anal fissures in a population-based cohort. Bio Med Central Gastroenterol. 2014; 14:129.
23. Giordano P, Gravante G, Grondona P, Ruggiero B, Porrett T, Lunniss PJ. Simple cutaneous advancement flap anoplasty for resistant chronic anal fissure: A prospective study. World J Surg. 2009; 33:1058-63
24. Arroyo A, Pe´rez 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 manometriclongterm results. J Am Coll Surg. 2004; 199:361-7