

Study of Operated Patients of Lateral Internal Anal Sphincterotomy for Chronic Anal Fissure

HARSHAD SHANKARLAL PATEL¹, JAGDISH CHAVDA², JAYESH PARIKH³, NEHAL NAIK⁴

ABSTRACT

Introduction: Anal fissure causes significant morbidity in the population. It is proposed that elevated sphincter pressures may cause ischaemia of the anal lining and this may be responsible for the pain of anal fissures and their failure to heal. When pharmacologic therapy fails or fissures recur frequently, lateral internal sphincterotomy is the surgical treatment of choice.

Material and Methods: Retrospective analysis was done of admitted and operated patients of anal fissure by lateral anal internal sphincterotomy either by open or closed technique between April 2010 and November 2011 in Gujarat Medical Education & Research Society Medical College, Sola, Ahmedabad, India. The follow-up data of all patients was evaluated for pain relief,

recurrence, wound infection, incontinence to flatus or stool or both for a period of up to 6 months.

Results: Wound infection rate was 10.3% in open method and 4.2% in closed method. Incontinence to flatus was 8.3% in closed method and 3.4% in open method. This was temporary and controlled within a 1 week. Incontinence to stool was 3.4% in open method which was temporary and controlled within 2 weeks while none in closed method. None of the patients in either group had come with recurrence within 6 months follow-up.

Conclusion: Lateral anal internal sphincterotomy is safe regarding long term incontinence and effective regarding recurrence.

Keywords: Anal fissure, Lateral internal anal sphincterotomy, Incontinence, Recurrence

INTRODUCTION

Anal fissure is a common anal pathology that causes significant morbidity in the population. It may be acute or chronic. It may be treated medically or surgically.

This is a retrospective analysis of admitted and operated patients of anal fissure by lateral anal internal sphincterotomy either by open or closed technique between April 2010 and November 2011 in General hospital & GMERS medical college, Sola, Ahmedabad, India.

The purpose of the study is to find out operative outcome of chronic anal fissure by open and closed method of lateral anal internal sphincterotomy in relation to post-operative complications with 6 months follow-up.

The cause of anal fissure has been long debated. Trauma to the anal canal secondary to the passage of hard stool is believed to be a common initiating factor. A history of constipation is not universally obtained and some patients on the contrary report an episode of diarrhea before the onset of symptoms. An anal fissure is a longitudinal split in the anoderm of the distal anal canal, which extends from the anal verge proximally towards, but not beyond, the dentate line.

Chronic fissures may be associated with a hypertrophied anal papilla and a skin tag. Over a period of time, the internal sphincter muscle hypertrophies, becoming more effective in keeping the wound open, and preventing spontaneous closure of the fissure. It is proposed that elevated sphincter pressures may cause ischaemia of the anal lining and this may be responsible for the pain of anal fissures and their failure to heal [1].

The mainstay of current conservative management is the topical application of pharmacological agents that relax the internal sphincter. This reduces spasm whereby pain is relieved and the increased vascular perfusion promotes healing. Such agents include glyceryl trinitrate 0.2% and diltiazem 2% [2,3].

When pharmacologic therapy fails or fissures recur frequently and patients have raised [4] resting anal pressure, lateral internal sphincterotomy is the surgical treatment of choice.

Lateral internal sphincterotomy remains the gold standard for definitive management of anal fissures, but comes with a risk of incontinence [5].

MATERIAL AND METHODS

This study includes retrospective analysis of operated patients of anal fissure by lateral internal sphincterotomy between April 2010 and November 2011 in General Hospital, Sola, Ahmedabad, India.

Patients were admitted and operated in Surgery Department, General Hospital & GMERS Medical College, Sola, Ahmedabad, India. Patients of all ages and both sexes are included. Some patients had undergone open lateral internal anal sphincterotomy while others underwent closed lateral internal anal sphincterotomy depending on operating preference of surgeons. All the patients had failed on conservative treatment of anal fissure.

The internal sphincter was divided away from the fissure itself in the left lateral (3 o'clock) position. The procedure was carried out by using an open or closed method, under saddle anesthesia, and with the patient in the lithotomy position. In the closed method a small longitudinal incision was made on skin at 3o'clock position just outside anal verge using a scalpel no. 11 blade. With the blade advanced parallel to the sphincter and then rotated such that the sharp edge faces the internal sphincter, which was then divided. Pressure was applied to the wound for a few minutes to prevent hematoma formation. Sometimes small gauze socked with povidone iodine & hydrogen peroxide was also used. In the open technique, the anoderm overlying the distal internal sphincter was divided longitudinally at 3 o'clock position to expose the sphincter, which was divided, and the wound was closed with absorbable sutures chromic catgut 3-0 round body simple suture. When external anal skin tags were present, they were excised but fissurectomy was not done in any patient.

The follow-up data of all patients was evaluated for pain relief, recurrence, wound infection, incontinence to flatus or stool or both for a period of up to 6 months.

RESULTS

Total 53 patients were admitted and operated in Surgery Department, General Hospital & GMERS Medical College, Sola, Ahmedabad between April 2010 & November 2011. This along with follow-up data of up to 6 months was evaluated retrospectively.

[Table/Fig-1] shows, most common age group (41.5%) were 20 to 30 years. 29 (54.7%) patients were operated by open lateral anal internal sphincterotomy method and 24 (45.3%) patients were operated by closed lateral anal internal sphincterotomy method. [Table/Fig-2] shows, out of 53 patients, 23 (43.4%) were male and 30 (56.6%) were female. All patients of Open and Closed method had post-operative pain relief of anal fissure.

[Table/Fig-3] shows, total 4 (7.5%) patients had wound infection. Out of these, 3 (10.3%) patients were in open method and 1 (4.2%) patient was in closed method. Out of 3 patients in open method, 1 patient was treated as outdoor patient with oral antibiotic and 2 patients were treated as indoor with injectable antibiotic. Out of these 1 patient was lost for follow-up and rests 2 were treated well with antibiotic. One (4.2%) patient in closed method had wound infection and was treated with oral antibiotics as outdoor patient and responded well. None of the patients in either group had come with recurrence within 6 months follow-up. Two (8.3%) patients in closed method had temporary incontinence to flatus which was controlled within 1 week.

[Table/Fig-3] shows, 1 (3.4%) patient in open method had temporary incontinence to flatus which was controlled within 1 week. Overall temporary incontinence to flatus was observed in 3 (5.7%) patients. One (3.4%) patient in open method had temporary incontinence to stool. While none of the patients in closed method had temporary incontinence to stool. Overall temporary incontinence to stool was observed in 1 (1.9%) patient and controlled within 2 weeks. In neither group, the patients had permanent incontinence to stool or flatus.

Age group (years)	Operated patient of fissure
< 20	2 (3.8%)
20 to 30	13 (24.5%)
31 to 40	22 (41.5%)
41 to 50	9 (17%)
51 to 60	3 (5.7%)
61 to 70	1 (1.9%)
71 to 80	3 (5.7%)
> 80	0
Total	53

[Table/Fig-1]: Age wise distribution of patients

Method of surgery	Male	Female	Total
Open	12	17	29 (54.7%)
Closed	11	13	24 (45.3%)
Total	23 (43.4%)	30 (56.6%)	53

[Table/Fig-2]: Sex wise distribution of patients

Post-operative complications	Method of surgery		Total (53)
	Open (29)	Closed (24)	
Pain of anal fissure not relieved	--	--	--
Wound infection	3 (10.3%)	1 (4.2%)	4 (7.5%)
Recurrence	--	--	--
Temporary incontinence to flatus	1 (3.4%)	2 (8.3%)	3 (5.7%)
Temporary incontinence to stool	1 (3.4%)	--	1 (1.9%)
Permanent incontinence to flatus	--	--	--
Permanent incontinence to stool	--	--	--

[Table/Fig-3]: Post-operative complications

DISCUSSION

41.4% of operated patients of anal fissure by lateral anal internal sphincterotomy were in young middle age group of 20 to 30 years. Age group in most studies were between 31 to 40 years [6-9]. Most of the patients were from younger age group in present study which might be due to changing habits of low fiber diet in young age group leading to constipation and subsequent anal fissure.

In present study, male were 43.4% and female were 56.6% in the operated patients of anal fissure by lateral anal internal sphincterotomy. Study done by Shafiq ullah et al., [6] and other study done by Tauro LF et al., had shown more male patients than female [8]. Study done by Oh C et al., had shown equal ratio of male and female [7].

In present study, wound infection rate was 10.3% in open method and 4.2% in closed method. Wound infection rate in closed method was lower than open method. Overall wound infection rate was 7.5% which was quiet high but all responded well with antibiotics while one patient was lost for follow-up. Study done by Shafiq ullah et al., had shown wound infection rate of 4% in each closed and open method [6]. Study done by Sanjay D Patel et al., had shown wound infection rate of 2% in open method [9].

In present study, incontinence to flatus was 8.3% in closed method and 3.4% in open method with an overall rate of 5.7%. This was temporary and controlled within a 1 week. Incontinence to stool was 3.4% in open method which was temporary and controlled within 2 weeks while none in closed method with overall a rate of 1.9%.

Study done by Shafiq ullah et al., had shown incontinence rate of 32% in open method and 24% in closed method [6] which is quiet high compared to present study.

Study done by E Ram et al., had shown 15% incidence of minor incontinence in the group who underwent anal dilatation and 4% incidence of minor incontinence in the group who underwent lateral sphincterotomy, which is comparable to our study [10].

Study done by Tauro LF et al., had shown incidence of flatus incontinence of 3.3% and anal seepage of 6.6% in lateral sphincterotomy group [8]. 'Study of "tailored" lateral sphincterotomy by selecting the height of sphincter to be divided' done by David RG Littlejohn et al. had shown that incidence of imperfect control of flatus of 1.4%, minor staining of 0.35 % and urgency of 0.7 %, which is less compared to our study [11]. This shows that incontinence rate can be decreased by reducing the cutting depth of internal sphincter.

In present study, both the group patients had pain relief for anal fissure in post-operative period. No recurrence was noted in either group of patients in the present study. May be longer follow-up would help. Study done by Shafiq ullah et al., had shown recurrence rate of 12% in each open and closed method [6]. Study done by E Ram et al., had shown recurrence rate of 2% with average follow-up of 11.2 months [10].

In present study, incidence of incontinence to flatus and stool was significant but it was temporary and controlled within maximum 2 weeks. Wound infection was quiet high in open method as compared to closed method but all were treated well with antibiotics while 1 patient was lost for follow-up. There was no incidence of permanent incontinence to either flatus or stool in present study with no recurrence was noted in both group patients with 6 months follow-up.

CONCLUSION

Lateral anal internal sphincterotomy is safe regarding long term incontinence and effective regarding recurrence. Wound infection is low in closed method compare to open method. Wound infection in open method and temporary incontinence of up to 2 weeks are major issue in immediate post-operative period.

REFERENCES

- [1] Gibbons CP, Read NW.; Anal hypertonia in fissures: cause or effect? *British Journal of Surgery*. 1986 Jun; 73(6):443-5 [pubmed].
- [2] Lund JN, Armitage NC, Scholefield JH; Use of glyceryl trinitrate ointment in the treatment of anal fissure, *British Journal of Surgery*. 1996 Jun; 83(6):776-7 [pubmed].
- [3] Jonas M, Speake W, Scholefield JH. Diltiazem heals glyceryl trinitrate-resistant chronic anal fissures: a prospective study. *Diseases of the colon and rectum* 2002 Aug; 45(8):1091-5 [pubmed].
- [4] Jonas M, Scholefield JH; Anal Fissure. *Gastroenterology Clinics North America*. 2001 Mar; 30(1):167-81 [pubmed].
- [5] Karen N. Zaghayan, MD and Phillip Fleshner MD. Anal Fissure. *Clinics in colon and rectal surgery*. 2011 March; 24(1): 22–30 [pubmed].
- [6] Shafiq ullah, Muhammad Nadeem, Nishtar; Closed versus open lateral internal sphincterotomy in chronic anal fissure: a comparative study of postoperative complications & results. *The Pakistan Journal of Medical Research*. 2004; 43(1).
- [7] Oh C, Divino CM, Steinhagen RM. Anal fissure, 20 year experience. *Diseases of the colon and rectum* 1995; 38(4):378-82 [pubmed].
- [8] Tauro LF, Shindhe VV, Aithala PS, Martis JJ, Shenoy HD. Comparative study of glyceryl trinitrate ointment versus surgical management of chronic anal fissure. *Indian Journal of Surgery*. 2011 Aug; 73(4): 268-77.
- [9] Sanjay D.Patel, Tom Oxenham & Bhandhipalyan V. Praveen. Medium-term results of anal advancement flap compared with lateral sphincterotomy for the treatment of anal fissure: *International Journal of Colorectal Disease*. September 2011; 26(9): 1211-14.
- [10] E Ram, T Vishne, I Lerner, Z. Dreznik. Anal dilatation versus left lateral sphincterotomy for chronic anal fissure: a prospective randomized study: *Techniques in Coloproctology*. December 2007 [pubmed].
- [11] David R. G. Littlejohn, Graham L. Newstead, Tailored lateral sphincterotomy for anal fissure, *Diseases of the Colon & Rectum*. December 1997; 40(12): 1439-42 [pubmed].

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Surgery, GMERS Medical College, Sola, Ahmedabad, Gujarat, India.
2. Assistant Professor, Department of Surgery, GMERS Medical College, Sola, Ahmedabad, Gujarat, India.
3. Associate Professor, Department of Surgery, B.J. Medical College, Ahmedabad, Gujarat, India.
4. Professor, Department of Surgery, GMERS Medical College, Sola, Ahmedabad, Gujarat, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Harshad Shankarlal Patel,
Plot No-194/2, Sector No-6-B, Gandhinagar, Gujarat-382006, India.
Phone: 091-9428691286, E-mail: drharshadspatel@yahoo.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Sep 14, 2013**
Date of Peer Review: **Nov 07, 2013**
Date of Acceptance: **Nov 17, 2013**
Date of Publishing: **Dec 15, 2013**