

Lateral Internal Sphincterotomy under Local and Spinal Anaesthesia for Chronic Anal Fissure: A Randomised Control Trial

Sourav Sarkar, Neeti Kapur

Abstract

Introduction: Anal fissure is described as a linear defect, or laceration, in the anoderm, located between the dentate line and the anal verge. An acute fissure is a simple laceration, whereas a chronic anal fissure is an ulceration with built-up scarred edges and exposed internal anal sphincter muscle fibers at its base. Additional findings may include a perianal skin tag at the external margin of the fissure and a hypertrophied papilla at the dentate.

Methods: This is a randomised control study that included 50 patients, divided in two groups, who were treated with lateral internal sphincterotomy under local anaesthesia (group A) and spinal anaesthesia (group B) in Dr. Ram Manohar Lohia Hospital, New Delhi, India, from May 2014 to November 2015. The follow-up period ranged from 2- 6 months.

Results: Fissure persistence or recurrence was found in 1 patient (4.16%) after 2 months in group B, and none in patients of group A. Wound healed by epithelization with mean of 1 week in group A, while it required 2 to 3 weeks for group B wounds to heal. There was wound infection in 5 out of 24 patients in group B (20.8%). There was no incontinence of flatus or stool in any of the patients in both groups.

Conclusions: Lateral internal sphincterotomy is now considered the treatment of choice for anal fissure, because it is a day care surgery, it causes less pain, it has negligible chances of recurrence and wound infection and is more effective in management of chronic anal fissure.

Key words: *Chronic anal fissure; fissure-in-ano; lateral internal sphincterotomy; spinal anaesthesia; local anaesthesia*

Introduction

Anal fissure (fissure-in-ano) is a common condition that usually presents as anal pain or bleeding with defecation. Bleeding is usually scant, bright red, and found on the tissue when cleansing after a bowel movement. Anal fissure is described as a linear defect, or laceration, in the anoderm, located between the dentate line and the anal verge. An acute fissure is a simple laceration whereas a chronic anal fissure is an ulceration with built-up scarred

edges and exposed internal anal sphincter muscle fibers at its base. Additional findings may include a perianal skin tag at the external margin of the fissure and a hypertrophied papilla at the dentate line. Chronic fissure is defined by these three findings—visible muscle, a skin tag (sentinel tag), and hypertrophied papilla

Anal fissure, a linear ulcer, which occurs in anal canal just distal to dentate line is commonly encountered by a proctologist. Constipated stools and internal sphincter hypertonia remain the main underlying etiological factors, so the all forms of treatment are directed to break this vicious circle [1-3]. Traditionally medical management is considered as the first line of treatment and internal anal partial sphincterotomy (open or closed), is reserved for chronic fissures that fails or recurs frequently after nonsurgical management [4]. However, lateral internal sphincterotomy is now considered as the treatment of choice for anal fissure, as it is more effective than the chemical sphincterotomy [5-8].

Materials and Methods

This study was carried out in department of surgery

Sourav Sarkar
Senior Resident

Neeti Kapur
Associate Professor

Department of Surgery, PGIMER & Dr Ram Manohar Lohia Hospital,
New Delhi, India

Corresponding author: Sourav Sarkar M.S. (General Surgery)
PGIMER & Dr RML Hospital, New Delhi 110001, India
Tel.: +919968737665, e-mail: 2660620ss@gmail.com

Neeti Kapur M.S. (General Surgery)
PGIMER & Dr RML Hospital, New Delhi 110001, India
Tel.: +919818182212, e-mail: neetikapur2004@yahoo.co.in

Received 18 July 2016; Accepted 14 Sept 2016

PGIMER & Dr. RML Hospital, New Delhi, on fifty patients diagnosed as chronic anal fissure. All patients included in the study were randomly selected by chit method for lateral internal sphincterotomy, into two groups. Group A to be operated under local anaesthesia and Group B to be operated under spinal anaesthesia with 26 and 24 patients in each group respectively.

Detailed written consent was obtained from all patients in the study. The diagnosis of chronic anal fissure was established on clinical examination, and after over 1 month of unsuccessful medical treatment (high residue diet, analgesics, and warm sitz baths). We collected information regarding age, sex, symptoms, bowel habits and findings on examination before surgery. Mean age of patients was 36 years (range: 18-65 years); 16 were women (32%) and 34 men (68%). Mean presentation of symptoms was 10 months (range: 1-30). Most patients came when they had no relief of symptoms even after conservative medical management. Chronic constipation, anal pain, and bleeding were the symptoms present in over 60% of patients.

Exclusion criteria included: associated anal pathologies (incontinence, stenosis, abscess, fistula, and haemorrhoids), other co-morbidities (IBD, AIDS, tuberculosis, sexually transmitted diseases, and immunodepression), anticoagulant therapy, and documented allergy to local anaesthesia.

Lateral internal sphincterotomy under local anaesthesia (group A)

Lithotomy position was used during this surgical procedure. The area was prepared and draped. Lateral internal sphincterotomy was done under local anaesthesia (group A) in twenty six patients and under spinal anaesthesia (group B) in twenty four patients. Local anaesthetic used was 2% Lignocaine.

Local infiltration was given below dentate line to block the sensation of pain below dentate line. Using a 21-g needle the local anaesthetic was injected deep into intersphincteric space on both right and left side. The total volume of 2% Lignocaine solution used was about 10-20 ml.

The index finger of the left hand is inserted into the anal canal. Keeping this finger in place, the intersphincteric groove and internal sphincter is felt. Using 11-no blade 5mm incision is given on the anal verge in the sub mucous plane at three o'clock position. The internal sphincter is hooked using right angle forceps of about 5 mm in diameter, and the internal sphincter is cut. The defect can be felt with the index finger. The anal canal packed with roll gauze, which exerts counter pressure and achieves haemostasis. Post operative pain assessment is done and requirement of analgesics is seen.

Lateral internal sphincterotomy under spinal anaesthesia (group B)

Lateral internal sphincterotomy was done under the effect of spinal anaesthesia, the same way it was done in local anaesthesia.

Follow Up

The patients were followed-up after one week, one month, three months. We collected information on symptoms, bowel habits, findings on examination, early and late complications, healing, and fissure recurrence. Healing was defined as an epithelialization of the fissure with absence of symptoms.

Results

After three months, all the patients were relieved of the symptoms of anal fissures, like pain and bleeding per rectum. Chronically constipated patients were given high fibre diet and laxatives when required. Fissure persistence or recurrence was found in one patient (4.16%) after two months in group B, and in none patient of group A.

On examination the wound healed by epithelialization and granulation mean one week in group A, while it required two to three weeks for group B wounds to heal. There was no raised anal tone when examined three months after the surgery. We performed open lateral internal sphincterotomy and there was wound infection in five out of twenty four patients in group B (20.8%). There was no incontinence of flatus or stool in any of the patients in both the groups.

Discussion

Chronic anal fissure is one of the main proctological disorders encountered in consulting rooms, due to its high prevalence and the great discomfort involved. It may be wrongly diagnosed as haemorrhoids and perianal fistula. Despite the lesion's small size, it causes great discomfort and pain, which sometimes becomes incapacitating [9].

The three typical symptoms of presentation are: constipation, bleeding, and proctalgia, with the latter being the main symptom. Clinical examination may require local anaesthesia for local pain. The anal fissure is most often located to the mild posterior line, and frequently a "sentinel tag" may be seen on it [9]. Ninety per cent of acute fissures respond to conservative treatment with a fibre-rich diet and warm sitz baths. However, many persist for several weeks and may become chronic.

Identification of the aetiology or predisposing factors may help prevent or reduce the high incidence of this disorder. Many studies have suggested various etiopathogenic

theories for anal fissure, and so a multifactorial origin for this condition (constipation, diarrhoea, local vascular or infectious conditions, idiopathic) is the most likely. Hypertonia of the internal anal sphincter associated with increased pressure following a voluntary contraction plays an important role [10,12]. For this reason, medical and surgical procedures to reduce the pressure of the internal anal sphincter have been used for fissure healing.

A great variety of therapeutic methods for the treatment of Chronic anal fissure has been proposed when conservative treatment has failed: non-surgical treatments, as topical treatments such as botulinum toxin [11], nitrate preparations [12], and nifedipine [13], and surgical treatments such as anal dilatation [17,18], sphincterotomy [16,17] and advanced flap [17]. All these techniques aim at a high rate of healing in association with a low morbidity rate. Internal lateral sphincterotomy has been proven the procedure of choice in various comparative studies, since it exhibits the highest rate of healing associated with the lowest incidence of incontinence.

Two types of internal lateral sphincterotomy have been widely discussed in the literature: open sphincterotomy, first described in 1951 by Eisenhamer [18], and closed or subcutaneous sphincterotomy, first described in 1971 by Notaras [19], with varying rates of recurrence (0-10%) and incontinence (0-66%).

We performed a randomised control study comparing lateral internal sphincterotomy under local and spinal anaesthesia in cases of chronic anal fissure. The results obtained in our study are comparable to those published for the closed or subcutaneous technique, with a healing rate higher than 90%, and a sporadic incontinence rate higher than 6%.

There was a study on 62 patients, which showed a significant difference in pain score related to needle pain on performing operation on VAS basis between group A and B (2.39 ± 1.40 vs. 1.61 ± 0.88). It indicated that the needle pain of spinal anesthesia was less than local anesthetic injection. Surprisingly there was significantly higher VAS score obtained in the spinal anesthesia group than local anesthesia about 6 hours after the operation [20].

Recurrence is closely related to persistence of sphincter spasm. We have found several clinical factors that relate to recurrence, such as the presence of a sentinel haemorrhoid or polyp, and the duration of symptoms for more than twelve months. Both factors usually suggest chronic advanced disease associated with difficulties in epithelization.

Incontinence in our study was related to a lower anal tone, due to an extensive section of the internal anal sphincter in patients in group B, because the internal anal sphincter could not be properly localised under spinal anaesthesia. During follow-up four patients (16.6%) in group B initially

reported temporary incontinence which decreased progressively over time.

Various studies have pointed out the advantages of open sphincterotomy under local anaesthesia, since results obtained in terms of healing and postoperative complications are similar to those obtained using other types of anaesthesia. This technique has the added advantage of not requiring hospital admission, an operating theatre, or preoperative studies. Moreover, the lower morbidity associated with local anaesthesia as compared to general or spinal anaesthesia gives the patient a higher degree of satisfaction and comfort [21,22]. The portion of the internal anal sphincter divided under local anaesthesia tends to be smaller, due to the relative difficulty in identifying the sphincter and to the lesser relaxation of the perineum in comparison to other types of anaesthesia, which results in fewer disturbances of continence [23].

Conclusion

The results of our study confirm these facts, and we also obtained long-term healing and morbidity rates similar to those obtained with other techniques. Therefore, lateral internal sphincterotomy may be considered a suitable and effective treatment for chronic anal fissure because it's a day care surgery, less pain, negligible chances of recurrence and wound infection. There is remarkable patients satisfaction because of relieve of distressing symptoms of anal fissure.

Ethical Approval: Ethical approval was obtained by the appropriate review board.

Conflict of Interest: There is no conflict of interest.

References

1. Jensen SL. Diet and other risk factors for fissure in ano. Prospective case-control study. *Dis Colon Rectum* 1988; 31:770-3.
2. Bove A, Balzano A, Parotti P, et al. Different anal pressure profiles in patients with anal fissure. *Tech Coloproctol* 2004; 8:151-6.
3. Ammari FF, Bani-Hani KE. Fecal incontinence in patients with anal fissure: a consequence of internal sphincterotomy or a feature of the condition? *Surgeon* 2004;2:225-9.
4. Jonas M, Scholefield JH. Anal fissure. *Clin Evid* 2004;11:533-43.
5. Ram E, Alper DY, Stein G, et al. Internal anal sphincter function following lateral internal sphincterotomy for anal fissure: a long term manometric study. *Ann Surg* 2005;242:208-11.
6. McCallion K, Gardiner KR. Progress in the understanding and treatment of chronic anal fissure. *Postgrad Med J* 2001;77:753-8.
7. Hyman N. Incontinence after lateral internal sphincterotomy:

- a prospective study and quality of life assessment. *Dis Colon Rectum* 2004; 47:35–8.
8. Sandelwski A, Koreza J, Dyaczynski M, et al. Chronic anal fissure – conservative or surgical treatment? *Waid Lek* 2004;57:80–4.
 9. Oh C, Divino CM, Steinhagen RM. Anal fissure: 20-year experience. *Dis Colon Rectum* 1995; 38:378-82.
 10. Mc Namara MJ, Percy JP, Fielding IR. A manometric study of anal fissure treated by subcutaneous lateral internal sphincterotomy. *Ann Surg* 1990; 211:235-8.
 11. Maria G, Brisinda G, Bentivoglio AR, et al. Botulinum toxin injections in the internal anal sphincter for the treatment of chronic anal fissure. Long-term results afre two different dosage regimens. *Ann Surg* 1998; 228:664-9.
 12. Evans JE, Luck A, Hewett P. Glyceryl trinitate vs lateral sphincterotomy for chronic anal fissure. Prospective, randomized trial. *Dis Colon Rectum* 2001;44:93-7.
 13. Brisinda G, Maria G. Oral nifedipine reduces resting anal pressures and heals chronic anal fissure. *Br J Surg* 2000;87:251.
 14. Olsen J, Mortensen PE, Krogh I, et al. Anal sphincter function after treatment of fissure-in-ano by lateral subcutaneous sphincterotomy versus anal dilatation. A randomized study. *Int J Colorectal Dis* 1987;2:155-7.
 15. Weaver RM, Ambrose NS, Alexander-Williams J, et al. Manual dilatation of the anus vs. lateral subcutaneous sphincterotomy in the treatment of chronic fissure-in-ano. Results of a prospective, randomized, clinical trial. *Dis Colon Rectum* 1987;30:420-3.
 16. Abcarian H. Surgical correction of chronic anal fissure: results of lateral internal sphincterotomy vs fissurectomy-midlinesphincterotomy. *Dis Colon Rectum* 1980;23:31-6.
 17. Leong AF, Seow-Choen F. Lateral sphincterotomy compared with anal advancement flap for chronic anal fissure. *Dis Colon Rectum* 1995;38:69-71.
 18. Eisenhamner S. The surgical correction of chronic anal (sphinteric) contracture. *S Afr Med J* 1951;25:486-9.
 19. Notaras MJ. Lateral subcutaneous sphincterotomy for anal fissure-a new technique. *Proc R Soc Med* 1969; 62:713.
 20. Mohsen Towliat Kashani S, Lak M, Ali Mohebi H et al. Lateral internal sphincterotomy under local anesthesia: a randomized clinical trial. *MJIRI* 2006;20:37-40.
 21. Kortbeek JB, Langevin JM, Khoo RE, et al. Chronic fissure-in- ano: a randomized study comparing open and subcutaneous lateral internal sphincterotomy. *Dis Colon Rectum* 1992;35:835-7.
 22. Boulos PB, Araujo JG. Adequate internal sphincterotomy for chronic anal fissure: subcutaneous or open technique? *Br J Surg* 1984;71:360-2.
 23. Simkovic D, Smejkal K, Hladík P. Evaluación de losefectos de la esfinterotomía en losenfermostratadosporfisura anal crónica. *Rev Esp Enferm Dig* 2000;92:399-401.