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# Lateral internal sphincterotomy for surgically recurrent chronic anal fissure

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Chronic anal fissure;
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**Abstract**

**BACKGROUND:** Lateral internal sphincterotomy cures chronic anal fissure by preventing internal sphincter hypertonia. However, cutting sphincter predisposes to sphincter dysfunction, manifests as incontinence of gas, liquid, or stool. Surgeons, therefore, can be too cautious in its use, making ineffective superficial incisions or avoiding the operation altogether. This study is designed to confirm the role of redo lateral internal sphincterotomy in the treatment of surgically recurrent chronic anal fissure.

**METHODS:** Patients undergoing repeat lateral internal sphincterotomy for surgically recurrent chronic anal fissure were accessed from a prospectively maintained database. Chronicity was defined by symptoms persisting more than 3 weeks. Contralateral sphincterotomy was performed with electrocautery through a stab incision over the intersphincteric plane. The length of sphincter division was the same as the length of the fissure. Phone questionnaire was administered and fecal continence was assessed by modified Cleveland Clinic Incontinence Score. Patients were asked to rank their overall satisfaction with the operation, and pre- and postoperative quality of life.

**RESULTS:** There were 57 patients, 24 women and 33 men; mean age was 47.9 ± 14.8 years. Mean follow-up was 12.5 ± 4.2 years (range 6.2 to 25.2 years). Presenting symptoms included pain (100%), bleeding (80%), pruritus ani (39%), constipation (26%), and diarrhea. Fifty patients (90%) presented with 1 fissure, and 40 were posterior. Most procedures were performed on an outpatient basis. Fissure healing rate was 98%, and 2 patients (4%) developed minor incontinence postoperatively (one of gas, the other, gas and seepage). Overall satisfaction was 9.7 ± .9 out of 10 with a significant improvement in the quality of life from 5.7 ± 2.4 out of 10 to 9.3 ± 1.4 out of 10 ($P < .001$).

**CONCLUSION:** Judicious repeat lateral sphincterotomy cures recurrent chronic fissures with minimal risk of incontinence.



Anal fissure is first described as a disease entity in 1934[1] and is defined as a longitudinal tear in the anoderm of the distal anal canal extending to the level of dentate line from the anal verge. Most often, patients present with significant pain on defecation, fresh colored rectal bleed, which is typically seen on the toilet paper or streaking on the surface of the stool and pruritus ani. The acute anal fissure tends to heal within 1 to 2 weeks, whereas chronic anal fissure persists and fails to heal thereafter; there is no exact definition of the time frame but most studies

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have used the 6 to 8 weeks mark and these fissures are unlikely to heal with medical management alone.[2,3] It has been estimated that chronic anal fissure afflicts about 10% of patients attending colorectal clinics but the true incidence may be much higher as most fissures heal spontaneously and are managed by primary care physicians with conservative treatments.[2,4,5]

This benign condition usually affects young or middle-aged adults but may also occur at extremes of age. It is equally distributed among men and women; however, 10% of women would present with an anterior tear vs 1% of men.[6] Despite the differences in location among different sex, the most common site at the time of presentation is at posterior midline position in lithotomy position. Often it presents as a single tear; when multiple or lateral fissures are encountered, one should be suspicious of other underlying conditions such as perianal Crohn's disease, ulcerative colitis, tuberculosis, syphilis, or HIV.[5,7]

The etiology of anal fissure is not well understood. Generally, 20% patients will describe an episode of constipation and passage of hard stool causing trauma to the anal canal. However, diarrhea has been reported to be a predisposing factor in 4% to 7% of patients with anal fissure.[2,8,9] Studies have suggested that ischemia plays a crucial role. Postmortem angiogram study[10] has demonstrated that a paucity of branches exist at the posterior commissure in 85% cases indicating an end of the capillary system of the inferior rectal artery. This helps to explain the predilection of anal fissures for this position. Laser Doppler flowmetry by Schouten et al[11] has again confirmed a reduction in blood flow at the posterior commissure when compared with the other 3 quadrants. In addition, high resting anal pressure of greater than 90 mm Hg is found in almost all patients with chronic anal fissure secondary to increased activity of internal anal sphincter.[2,7] The high resting anal pressure compresses these end arteries and cause ischemia at the posterior commissure.[12] The concept of surgical management is that it disrupts internal anal sphincter and improves anodermal blood flow to allow healing.[1,2,13,14] On the other hand, small proportion of patients have chronic anal fissure in association with internal anal sphincter hypotonia. These are usually because of an underlying secondary pathology such as HIV infection, anal sexual practice, sexual abuse, Crohn's disease, perianal tuberculosis, previous obstetric trauma, or anorectal operations.[3,7]

Clinically, discomfort is often severe enough to prevent a digital examination in the office, therefore the diagnosis is often made with the examination under anesthetics. In the case of a chronic fissure, a linear or pear-shaped breach in the lining of the anal canal below the dentate line with indurated edges may be seen along with the horizontal fibers of the internal anal sphincter. There is also a notable lack of granulation at the base. A sentinel skin tag may be present distally and a papilla proximally.[15]

Over the last 2 decades, lateral internal sphincterotomy has been advocated for fissure of a chronic state with a success rate as high as 96% to 100%. However, it is often associated with 5% recurrence and 0% to 35% of incontinence rates.[5,15–18] This study is designed to assess the efficacy and complications of repeat lateral internal sphincterotomy in the management of surgically recurrent chronic anal fissure.

## Patients and Method

All patients presenting with a recurrent chronic anal fissure who underwent repeat contralateral internal sphincterotomy by a single surgeon were extracted from a prospectively maintained database. All patients were previously treated with a lateral internal sphincterotomy at other centers and all received a trial of medical therapy for at least 12 months in-between the 2 surgical procedures. Chronic fissure was defined as a breach in the lining of the anal canal below the dentate line with the exposure of horizontal fibers of the internal anal sphincter lasting more than 3 weeks.

Medical records were reviewed and extracted data included age, sex, type of symptoms, duration of symptoms, preoperative bowel function, past medical, surgical, and obstetric history, effectiveness of medical therapy, operative findings, fissure recurrence, and complication rates. With Institutional Review Board approval, all patients were contacted by phone and with questionnaire to check the accuracy of the information and the continence was assessed by modified Cleveland Clinic Incontinence Score. Patients were asked to rank the overall satisfaction, and preoperative and postoperative quality of life out of 10.

All operations were performed by a single surgeon. A routine operation under general anesthetics consisted of a digital examination, sigmoidoscopy as well as proctoscopy to confirm the diagnosis of chronic fissure and to exclude other pathology. With the patient in lithotomy's position, the perianal area was then prepped and draped in standard fashion. The internal anal sphincter was then identified by palpation. A .5 cm radial incision was made over the internal anal sphincter at the contralateral side, either right or left anterolateral positions, and the internal sphincter was grasped with Ellis to retract it from the rest of the tissue. Curved artery forceps was then passed under the muscle fibers to isolate the superficial portion of the internal sphincter muscle. Division with diathermy to the apex of fissure. Following hemostasis, the wound was left open. Patients were not routinely started on laxatives or antibiotics. Patients were followed up in the outpatient unit at 3 months and then at 6 months postoperatively. Thereafter, patients were advised to contact the colorectal surgical department if there were any concerns.

Statistical analysis was performed with the aid of the JMP computer program (version 8.0 for Windows). Continuous variables were expressed as mean ± standard deviation or number and percentage of patients. Comparisons between the 2 groups were made using Student $t$ test; statistical difference is defined as $P$ less than .05.