



Anal Fissure Treatment Alone or With Other Anal Disorders Under Local Anesthesia and in Co Morbid Patients

Ahmed Soliman

General Surgery, Department, Faculty of Medicine, Assiut University, Egypt

Gamal A Makhoul

General Surgery Department. Faculty of Medicine . Assiut University, Egypt

Khaled A. Abdel-Rahman

Anesthesia Department, Faculty of Medicine, Assiut University, Egypt

ABSTRACT

Introduction: Chronic anal fissure is a common anal problem that can result in a great discomfort. Acute anal fissure responds to conservative treatment, but chronic anal fissure unlikely to heal with conservative treatment. Surgery is considered as an accepted tool to treat chronic anal fissure.

Aim: To operate anal fissure under local infiltration anesthesia, to evaluate patient satisfaction during procedure and to evaluate if other anal procedures can be performed in the same session with it. Patients and methods: This prospective, observational study was conducted on patients with chronic anal fissure. Open lateral internal anal sphincterotomy under local anesthesia was done. Patient discomfort during the manoeuvre, the need of sedation, patient relaxation, operative time, intraoperative complications, and postoperative complications were evaluated.

Results: The study included 102 patients operated as outpatient's procedures for chronic anal fissure. The most common site of the fissure was posteriorly located (79.4%). Patient's relaxation was recorded in the majority of cases (94 cases (92.2%) with low pain score. Minor bleeding was the only reported intraoperative complications in (3.9%) of cases. Mild incontinence was the only recorded postoperative complication in (4.9%) of cases.

Conclusions: Local anaesthetic infiltration is a well-tolerated, and effective form of anaesthesia when used for open lateral internal anal sphincterotomy as a treatment of anal fissure. This technique reduces the hospital stay, and cost. Patient's relaxation and satisfaction were excellent.

KEYWORDS

Chronic anal fissure; internal anal sphincterotomy; Local anaesthesia

INTRODUCTION

Chronic anal fissure is a common anal problem that despite of its small size can result in a great discomfort. ⁽¹⁾

Many studies revealed multifactorial etiopathologies such as constipation, diarrhea, local vascular or infectious conditions or idiopathic causes can lead to this problem. ^(2, 3)

Acute anal fissure responds to conservative treatment, but if persists for more than two months with signs of chronicity (sentinel skin tag, hypertrophied anal papillae, etc) are unlikely to heal with conservative treatment. Surgery is considered as an accepted tool to treat chronic anal fissure. ⁽⁴⁾ Several surgical techniques were used for the treatment of anal fissure in literature.

1- Four fingers dilatation: first performed in 1838 ⁽⁵⁾ and the technique had been reported to cause healing in 90% of patients. ⁽⁶⁾

2- Lateral internal sphincterotomy: has become the gold standard for surgical treatment of anal fissures due to the high healing rate and low risk of incontinence. ⁽⁷⁻¹⁰⁾

3- Fissurectomy: removing the fissure by scissors or diathermy. Apart from children it is not used alone as a treatment modality ⁽¹¹⁾.

4- Advancement flap: recommended for patients with chronic fissures which associated with normal or hypotonic anal sphincters especially in those with postpartum fissures or previous injury to the sphincter. ⁽¹²⁾

AIM OF THE WORK

1-To evaluate the outcome of operating chronic anal fissure under local anesthesia.

2-To evaluate patient satisfaction during procedure.

3- To evaluate the possibility of performing other anal procedures in association with chronic anal fissure.

PATIENTS & METHODS

This prospective, observational study was performed in Assiut University Hospital, General Surgery Department during 2 years period (from January 2013 to January 2015).

The study was conducted on patients with clinical manifestations of chronic anal fissure for whom conservative treatment failed with signs of chronicity and exceptionally in some cases with acute or traumatic anal fissure.

Inclusion criteria:

1. Patients with chronic anal fissure in whom conservative treatment failed and developed signs of chronicity.
2. Patients with anal fissure due to external anal trauma who needed urgent operation to stop the bleeding and sphincterotomy was done at the same session.

Exclusion criteria:

1. Those associated with anal incontinence.
2. Patients did not prefer local Anesthesia.

All the included patients were subjected to:

1. Complete history taking with stress on the onset, course, duration of symptoms, predisposing factors, and medical co morbidities such as liver affection, and cardiac abnormalities.
2. Thorough clinical examination.
3. Patients under anticoagulant therapy were subjected to laboratory tests to assess their bleeding profiles.
4. Routine colonic preparation using laxatives the night

before and enema the day of the intervention.

The Wexner score was used to evaluate post operative faecal incontinence.⁽¹³⁾

Type of incontinence	Never	Rarely	Sometimes	Usually	Always
Solid	0	1	2	3	4
Liquid	0	1	2	3	4
Gas	0	1	2	3	4
Wears pad	0	1	2	3	4
Lifestyle alteration	0	1	2	3	4

Never, 0; rarely, <1/month; sometimes, <1/week, 1/month; usually, <1/day, 1/week; always, 1/day. 0, perfect; 20, complete incontinence.

Precautions:

1. Patient with co morbid diseases, anaesthesia offers great risk to them and considered high risk anaesthetic score. Cirrhotic patients face many problems as bleeding tendencies, & development of complications related to cirrhosis. So we did the following precautions:
2. Patients with liver cirrhosis did not receive any recommended treatment preoperatively & received measures against hepatic encephalopathy post operatively.
3. Patients with cardiovascular diseases on oral anti coagulants (Warfarine), fractionated heparin replaced Warfarine 4-6 days before the operation and continued for 48 hours postoperatively.
4. ASA Physical Status Classification System was performed.⁽¹⁴⁾ We usually refered to compensated cirrhosis as ASA III and decompensated cirrhosis as ASA IV.

Operative Techniques: Open lateral internal anal sphincterotomy under local anaesthesia.

The operation performed with the patient on the jack-knife position. Infiltration of about 15 cm local anesthetic agent (lidocaine 1%) in the perianal skin, beneath the fissure, the intersphincteric space and the bed of the piles or the low perianal fistula if present.

Open lateral internal sphincterotomy was performed by exposing the internal sphincter. Division and ligation of the two ends of the muscle between two clamps was performed. Associated haemorrhoids were excised and ligated. In cases associated with low perianal fistula, fistulotomy was also performed.

In patients with liver cirrhosis, compression at the site of operation for few minutes was performed to decrease incidence of bleeding. No cirrhosis related complications were reported.

The following outcome criteria were evaluated: patient discomfort during the manoeuvre, the need of sedation, patient relaxation, operative time, intraoperative complications, post-operative complications, and postoperative healing of the fissure like disappearance of pain. Patients were discharged 1-2 hours after the intervention.

During the immediate preoperative period a visual analogue scale (VAS) was used for all patients to indicate their level of tension with 0= no tension and 10= extreme tension. Patients were further classified according to their scores into: low (0-3), medium (4-7) and high (8-10).⁽¹⁵⁾

After the end of the surgical procedure all patients were evaluated again for their intra-operative level of tension on the same scale. For evaluation of intra-operative pain, VAS was also used (with 0= no pain and 10= worst imaginable pain), patients were classified into mild (1-3), moderate (4-6) and severe pain (7-10). Patients level of satisfaction was measured using the same scale (with 0 = extremely satisfied and 10 = extremely unsatisfied). Satisfaction scores were classified into very satisfied (1 to 2), somewhat satisfied (3 to 5), and dissatisfied (6 to 10). Patients were also asked whether they would

accept the same type of local anaesthesia again.

Each patient gave his/her written consent to participate before the surgery.

RESULTS

The study included 102 patients operated as outpatient's procedures for chronic anal fissure. Those patients undergone open lateral internal anal sphincterotomy under local anaesthesia. The demographic characteristic was shown in **table (1)**: The most common predisposing factor was straining with constipation 74.5%. The most common site of fissure was posterior (79.4%). The associated medical co morbidities were chronic liver diseases and cardiac diseases.

Patients with chronic anal fissure alone were 85 patients (83.3%), patients with chronic anal fissure associated piles were 10 patients (9.8%) and patients presented with chronic anal fissure associated with low perianal fistula were 7 patients (6.9%).

Table 1: The characteristics of the study group:

Variable	Number (percentage) *
Age:	Range (20-62 year) Mean : 30 ± 5 year
Sex:	
Male	60 cases (58.8%)
Female	52 cases (41.2%)
Predisposing factors:	
Straining with constipation	76(74.5%)
Child birth	26(25.5%)
Medical co morbidities:	
Chronic Liver diseases	12 cases (11.8%)
Cardiac diseases	8 cases (7.8%)
Site:	
Posterior	81(79.4%)
Anterior	15 (14.7%)
Combined (Anterior and Posterior)	6 (5.9%)
Associated anal problems:	
Piles	10 cases (9.8%)
Low perianal fistula	7 cases (6.9%)

* Values are number and percentages except age presented as mean ± SD or range: Total number of cases = 102

Outcome criteria among the study group:

Patient's relaxation was recorded in 94 cases (92.2%). Minor bleeding was the only recorded intra-operative complications in (3.9%) of cases. Mild incontinence was the

only recorded postoperative complication in (4.9%) of cases. Ninety two percent of cases had regular follow up till 4 months with no complications or recurrence as shown in **table (2)**.

Table 2: Outcome criteria among the study group:

Variable	Number (percentage) *
Patient discomfort	14 /102 (13.7%)
Patient relaxation and satisfaction	94/102 (92.2%)
Operative time	Range (5-25 minutes) (mean 12 ± 5.2 minutes)
Intraoperative complications	Minor bleeding: 4/102 (3.9%)
Postoperative complications	Mild incontinence: 5 /102 (4.9%)
Follow up to one year	96/102 (92.2%)

DISCUSSION

Chronic anal fissure is a common anal problem. It causes great discomfort, and pain despite the lesion is small in size. Sometimes pain becomes incapacitating.^(16, 17)

Chronic anal fissure is reported to affect men and women alike, though men aged 20 to 40 years were more frequently affected.^(16, 18) The three typical symptoms of presentation are: constipation, bleeding, and proctalgia, with the latter being the main symptom. The anal fissure is most often located to the mid posterior line, and frequently a "sentinel haemorrhoid or polyp" may be seen on it.^(16, 18) Internal lateral sphincterot-

omy has been proven to be the procedure of choice in various comparative studies, since it exhibits the highest rate of healing associated with the lowest indexes of incontinence. Two types of internal lateral sphincterotomy have been widely discussed in the literature: Open sphincterotomy, first described in 1951 by Eisenhamer⁽¹⁹⁾, and closed or subcutaneous sphincterotomy, first described in 1971 by Notaras⁽²⁰⁾.

In our study the most common site of fissure was posterior and this was comparable with previous studies.^(16, 18, 21) The mean operation time in our study was (12 minutes) and this was comparable to time which was recorded in the study of Shahi et al., 2014⁽²²⁾ (9 min). Patient relaxation and satisfaction was recorded in 92.2% in our study. In Shahi et al, study (2014)⁽²²⁾, patient acceptability/satisfaction was good. Minor bleeding was the only recorded intra-operative complications in our study (3.9%) and this was near to (2.5%) reported in the study of Sánchez Romero et al 2014.⁽²¹⁾ Mild incontinence was the only recorded postoperative complication in (4.9%) and this was near to (5%) reported in the study of Sánchez Romero et al 2014.⁽²¹⁾

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. The lower morbidity associated with local anaesthesia as compared to general or spinal anaesthesia gives the patient a higher degree of satisfaction and comfort.^(23, 24) 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.⁽²⁵⁾

Patient's undergone surgical treatment for chronic anal fissure alone represented about 83.3 percent of cases, those undergone surgical treatment for the fissure and haemorrhoidectomy in association with it represented about 9.8 percent of cases and those undergone surgical treatment for chronic anal fissure and low perianal fistula represented about 6.9 percent of cases.

One patient presented with anal fissure due to external trauma and associated 4th degree piles were found during the procedure, had undergone urgent surgical operation to control bleeding, sphincterotomy, and haemorrhoidectomy. At the end of the procedure excessive loss of perianal skin were found, and so we did a V-Y graft to prevent the future anal stenosis.

Only fewer reports about the use of local anaesthesia for treatment of haemorrhoidectomy were found in literature.

The application of local anaesthetic does not take longer time compared to general anaesthesia, and symptoms such as pain, nausea, and vomiting are not increased. The pain-free interval was also similar; patients under local anaesthesia were satisfied as in general anaesthesia.⁽²⁶⁾

CONCLUSION

Local anaesthetic infiltration is a well-tolerated and effective form of anaesthesia when used for open lateral internal anal sphincterotomy as a treatment of anal fissure especially in co-morbid patients to whom other methods of anaesthesia offers a great risk. This technique reduces hospital stay and cost. Patient relaxation and satisfaction were excellent. Other anal procedures can be performed in association with it like piles, low perianal fistula and anoplasty.

REFERENCES

1. Sailer M, Bussen D, Debus ES, Fuchs KH, Thiede A. Quality of life in patients with benign anorectal disorders, Br J Surg 1998; 85: 1716-1719.
2. Oh C, Divino CM, Steinhagen RM. Anal fissure: 20-year experience. Dis Colon Rectum 1995; 38: 378-82.
3. Sales R, Martínez P, Lóbez T, Culell P, Fons P, Ballús LL, et al. Cirugía de la

4. fisura anal crónica: resultados a largo plazo. Cir Esp 2000; 68: 467-70.
5. McCallion, K. and Gardiner, K.R. Progress in the Understanding and Treatment of Chronic Anal Fissure. Journal of Postgraduate Medicine 2001; 77: 753-758. <http://dx.doi.org/10.1136/pmj.77.914.753>.
6. Recamier JC. Extension, message et percussion cadancee dans les treatment des contractures musculaires. Rev Med Fr Estrang 1838; 1: 74.
7. Marby M, Alexander-Williams J, Buchmann P, Arabi Y, Kappas A, Minervini S, Gatehouse D, Keighley MR. A randomized controlled trial to compare anal dilatation and lateral subcutaneous sphincterotomy for anal fissure. Dis Colon Rectum 1979; 22: 308-311.
8. Bailey RV, Rubin RJ, Salvati EP. Lateral internal sphincterotomy, Dis Colon Rectum 1978; 21: 584-586.
9. Argov S, Levandovsky O. Open lateral sphincterotomy is still the best treatment for chronic anal fissure. Am J Surg 2000; 197: 201-202.
10. Hananel N, Gordon PH. Lateral internal sphincterotomy for fissure in ano revisited. Dis Colon Rectum 1997; 40: 597-602.
11. Nelson RL. Meta analysis of operative techniques for fissure in ano. Dis Colon Rectum 1999; 42: 1424-1428.
12. Scholtz T, Hetzer FH, Dindo D et al. Long term follow up after combined fissurectomy and botox injection for chronic anal fissure. Int J Colorectal Dis 2007; 1077-1081.
13. Jonas M, Scholefield JH. Anal fissure, Gastroentrol Clin North Am 2001; 30: 167-181.
14. Jorge JMN and Wexner SD. Etiology and management of fecal incontinence. Dis Colon Rectum 1993; 36:77-97.
15. ASA Physical Status Classification System. American Society of Anesthesiologists. Available at <http://www.asahq.org/resources/clinical-information/asa-physical-status-classification-system>. Last approved by the ASA House of Delegates on October 15, 2014.
16. UK: Assessment of acute and chronic pain; [Cited 2011 Oct 3]. Frca.co.uk [Internet] [updated 2009 Jan 12]. Available from: www.frca.co.uk/article.aspx?articleid=100549.
17. Oh C, Divino CM, Steinhagen RM. Anal fissure: 20-year experience. Dis Colon Rectum 1995; 38: 378-82.
18. Sailer M, Bussen D, Debus ES, Fuchs KH, Thiede A. Quality of life in patients with benign anorectal disorders. Br J Surg 1998; 85: 1716-9.
19. Sales R, Martínez P, Lóbez T, Culell P, Fons P, Ballús LL, et al. Cirugía de la fisura anal crónica: resultados a largo plazo. Cir Esp 2000; 68: 467-70.
20. Eisenhamer S. The surgical correction of chronic anal (sphincteric) contracture. S Afr Med J 1951; 25: 486-9.
21. Notaras MJ. Lateral subcutaneous sphincterotomy for anal fissure-a new technique. Proc R Soc Med 1969; 62: 713.
22. Sánchez Romero A, Arroyo Sebastián A, Pérez Vicente F, Serrano Paz P, Candela Polo F, Tomás Gómez A, Costa Navarro D, Fernández Frías A, Calpena Rico R. Open lateral internal anal sphincterotomy under local anaesthesia as the gold standard in the treatment of chronic anal fissures. A prospective clinical and manometric study. Rev Esp Enferm Dig. 2004 Dec;96(12):856-63.
23. Shahi KS, Bhandari G, Bhuvan, Prashant, Sanjeev, Rakesh, Malvika. Lateral Sphincterotomy for Anal Fissure under Local Anesthesia: is it Feasible? Journal of Evolution of Medical and Dental Sciences 2014; 3(16); 4249-4253.
24. García-Aguilar J, Belmonte C, Wong WD, et al. Open vs. closed sphincterotomy for chronic anal fissure: long-term results. Dis Colon Rectum 1996; 39: 440-3.
25. Boulos PB, Araujo JG. Adequate internal sphincterotomy for chronic anal fissure: subcutaneous or open technique? Br J Surg 1984; 71: 360-2.
26. Simkovic D, Smejkal K, Hladik P. Evaluación de los efectos de la esfinterotomía en los enfermos tratados por fisura anal crónica. Rev Esp Enferm Dig 2000; 92 (6): 399-401.
27. Ahmed E. Al-Raymoony AE. Surgical treatment of anal fissures under local anaesthesia. Saudi Medical Journal 2001; 22 (2) 114-116.