

Original Research Article

Anal Fissure Treatment by Medication and Surgery

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Abstract

Anal fissure is a most common cause of anal pain [1]. This prospective study includes 236 patients complaining of anal fissure treated from a period of September 2013 to December 2015 to assess options of management of anal fissure. Male patients were 121 (51%) and female were 115 (49%). All patients were clinically assessed in an outpatient clinic and conservative treatment started to all patients that shown to be effective in 141 patient (60%). Surgical treatment applied to 95 patients (40%) whom not responded to conservative treatment, or, patients with recurrent fissure. Lateral sphincterotomy was the surgical procedure applied in open or close method (62 and 33 patients respectively), under local or general anesthesia (54 and 41 respectively). Local anesthesia was associated with a significant low duration of admission from 1 to 24 hours (mean of 3 hours) while general anesthesia with a significant higher duration of 12 to 36 hours (mean of 19 hours). The healing rate following surgery in a local or general anesthetic approach was 95%. No difference in a healing rate between open or closed technique of sphincterotomy. Flatus incontinence was reported in 3 patients. Initial treatment of anal fissure should be conservative, lateral sphincterotomy is a safe procedure with a high cure rate, low incidence of complications and could be performed under local or general anesthesia.

Key words: Anal fissure, conservative treatment, lateral sphincterotomy, local anesthesia, recurrence.

الخلاصة

الفطر الشرجي هو من اكثر اسباب الم الشرج والذي يصيب الرجال والنساء. هذه الدراسة تضمنت 236 مريضاً لبيان طرق معالجة الفطر تحفظياً وجراحياً. كان عدد الذكور 121 مريضاً والنساء 115. جميع المرضى اخضعوا لعلاج تحفظي ابتداءً بتغيير طبيعة الطعام الى الغني بالالياف واستخدام الادوية موضعياً وتبين ان الاستجابة لهذا العلاج هي 60%. المرضى الذين لم يستجيبوا للعلاج التحفظي او الذين عاود عليهم الالم فقد اخضعوا للعلاج الجراحي والذي اجري لـ 95 مريضاً وقد اجريت لهم جميعاً عملية قص المعصرة الجانبي مع تنظيف انسجة قرحة الفطر تحت التخدير الموضعي (54 مريضاً) او التخدير العام (41 مريضاً) وكانت نسبة الشفاء بعد العملية هي 96%. لم يلاحظ اي فرق من حيث النتيجة او المضاعفات بين مجموعة من اجريت لهم الجراحة تحت التخدير الموضعي او العام. كما لوحظ ان فترة رقاد المستشفى لمرضى التخدير الموضعي هي اقل بكثير من مرضى التخدير العام. الاستنتاج هو ان علاج الفطر الشرجي هو تحفظي بالادوية وطبيعة الطعام ابتداءً... وجراحي لمن لم يستجب للعلاج التحفظي بعملية قص المعصرة الجانبي والذي ممكن اجراءه بتخدير موضعي او عام ونسبة شفاء عالية.

Introduction

An anal fissure is a longitudinal tear or defect in the skin of the anal canal distal to the dentate line. Anal fissures is classified according to causative factors into primary and secondary. Primary fissures are usually and typically benign and

most likely related to local trauma such as hard stools, vaginal delivery, prolonged diarrhoea, repetitive injury or penetration. Secondary fissures are found in patients with inflammatory bowel disease (e.g. Crohn's disease), previous anal surgical procedures, granulomatous diseases like tuberculosis and

sarcoidosis, infections (e.g. HIV, syphilis) or malignancy. [2]

An acute anal fissure usually heals with 4–8 weeks of conservative therapy. Surgery is usually required if conservative measures fail and fissure becomes chronic.[3, 4,5]

The pathophysiology of anal fissures is not so clear. It is probable that local pain and spasm of the internal anal sphincter due to acute injury leads to fissure formation. This spasm leads to high resting anal sphincter pressure [6], that in turn leads to reduced blood flow and ischaemia[6,7] and poor healing. Unless this cycle is broken the fissure will persist [4].

In about 90% of patients the anal fissure is posteriorly located in midline. It is hypothesized that this posterior site in midline may occur because this portion of the anal canal is poorly perfused. [8, 9] Anterior fissures affect approximately 10% of the patients and may have a different pathophysiology. They are associated mostly with younger female patients often with injury to, or, dysfunction of the external anal sphincter. In less than 1% of patients the fissures are lateral or multiple [3]. Irrespective of these differences, anterior and posterior anal fissures are considered to be of primary etiology, whereas multiple or lateral fissures are most probably secondary in nature [4]. The aim of management are to break the cycle of anal sphincter spasm to improve blood flow to the fissured area so that healing can occur. Almost 50% of patients with acute anal fissures heal with conservative measures alone involving only increased fiber diet intake and warm bathing of the anal area that leads to relaxation of the internal sphincter by a somatoanal reflex. [5, 10, 11].

Topical preparations used in conservative treatment contain glyceryl trinitrate 0.2% that is metabolized at a cellular level to liberate nitric oxide which in turn causes relaxation of the internal sphincter via the guanylate cyclase pathway [19]. A calcium channel blocker[12] as topical diltiazem 2% [13] and

topical nifedipine had comparable efficacy to topical glyceryl trinitrate [14].

Surgery is indicated for patients not responding to conservative measures that are usually suggested between 4 and 12 weeks (6–8 weeks may be the ideal timing) after starting conservative treatment [17].

Treatment of anal fissure by sphincterotomy was first suggested in 1818 by Boyer [15]. The gold standard surgery for anal fissure is lateral internal sphincterotomy. This procedure is commonly performed by division of the internal anal sphincter involving its distal end to either the dentate line or the proximal end of the fissure (whichever comes first) [17], or a division of 30% of internal sphincter [18]. Lateral internal sphincterotomy has an excellent fissure healing rate of about 95%. Common reported complications are recurrence in up to 6% and incontinence of flatus or stool that is usually transient in up to 17% of patients[12]. Lateral fissures or multiple should be treated with a high index of suspicion. Management of secondary fissures include a proper investigation and extensive multidisciplinary approach involving gastroenterologists, infectious disease specialists, oncologists, pathologists and colorectal surgeons.

Materials and Methods

This prospective cross sectional study was conducted in outpatient clinic and private clinic in a period from September 2013 to December 2015 includes 236 patients with anal fissure. History taken and clinical examination done for all patients. The site of fissure is localized by inspection, with a tenderness assessment by gentle palpation. Initially, conservative treatment was started to all patients with anal fissure. This treatment includes a high fiber diet with laxative on need, local anesthetic lubricant, hot bath, and topical nifedipine or glyceryl trinitrate. Digital rectal examination, and a proctoscopy was done for patients with a mild anal pain or after pain relief following a conservative treatment.

Failure of healing after 6 weeks of conservative measures and patients with recurrent fissure are considered a candidate and advised for surgery.

Lateral sphincterotomy is performed to all those patients. A consent for operation is obtained after explanation a nature of surgery, possible complication and type of anesthesia. Local anesthesia was applied to cooperative patients with a primary non-bleeding fissures. General anesthesia was applied to a patient with a bleeding, who needs assessment under general anesthesia, obese patients and upon patient's desire.

Local anesthetic technique is applied to a patient in a left lateral or lithotomy position. 3 to 5 ml of 2% lidocaine solution infiltrated locally by a syringe with a needle gauge 29 at a site of lateral sphincterotomy and a site of sentinel pile. Open subcutaneous sphincterotomy; a one cm radial incision at lateral margin of anus is done, the internal white to pale pinkish colored sphincter is identified using a small curved artery clamp with a finger palpation. A sphincter bundle of fibers isolation of about 4 to 7 mm thickness according to the size of anal canal so that should safely less than one third length of the anal canal (30% of internal sphincter). The isolated fibers are sectioned by a knife. Usually there is a simple ooze of blood at a wound site that controlled by a gentle gauze pressure or may need a stitch with 3/0 absorbable suture. A sentinel pile is excised with a knife curettage of a granulation tissue in a floor of fissure ulcer. Simple external gauze dressing to the area applied.

The same above technique (opened technique) or a closed technique may be used in a patients operated under general anesthesia. A closed technique performed by a small stab, using a blade no. 11, of about one cm parallel to lateral edge of anus placed at an intersphincteric plane that can be detected by palpating internal sphincter fibers. The scalpel is then turned medially to

transect a lower (distal) fibers of internal sphincter.

All patients are assessed postoperatively at 2 and 4 weeks for healing progress and pain relief. Any incontinence of fluid or gases are asked about. The patients are advised for a follow up if there is any future pain recurrence.

Results

This study includes 236 patients with anal fissure; 121 (51%) were male and 115(49%) were female. Posterior anal fissure diagnosed in 224(95%) patients, anterior fissure in 11(5%) patients, and one lateral fissure. Age distribution was mainly in young group [table 1].

155(65%) patients were presented with an acute fissure (less than 6 weeks pain duration), and 81(35%) patients for more than 6 weeks (chronic fissure).

Healing of a fissure and relief of pain by a conservative treatment was obtained in 173 (73%) patients within 4 weeks. A recurrence of pain occurred in a 32 (18% of healed patients) in a next 3 months. 63 patients (27% of all patients) did not respond to conservative treatment, most of them were with chronic fissure at presentation.

Surgical treatment included in 95(40%) of all patients, whom did not respond to conservative or with a recurrence of fissure. Lateral sphincterotomy applied to all patients. Local anesthesia used in 54 patients (57% of surgically treated), and general anesthesia is used in 41 patients (43% of surgically treated). Outcome of surgery revealed a 92 patients (96%) with a pain relief and healing within 6 weeks. Healing failure was reported in a 3 (4%) patients after surgery. Postoperative complications reported was bleeding, sever pain and flatus incontinence that reported in a 3 patients and persist after 2 months following surgery (Table 2). Duration of hospital admission in a locally anesthetized patients was from 1 to 24 hours (average of 3 hours) while generally anesthetized patients admitted for 12 to 36 hours (average 19 hours) [table 3].

There is a significant low duration of admission below 12 hours in a locally anesthetized patients with a significant high duration of admission above 24 hours in a

generally anesthetized patients. The outcome and complications was the same in a locally or generally anesthetized patients.

Table 1: Age distribution of patients with anal fissure.

Age(years)	Number of patients	percentage
10 - 20	10	4%
21-30	53	22%
31-40	103	44%
41-50	42	18%
Over 50	28	12%
total	236	100%

Table 2: Frequency of postoperative complication following lateral sphincterotomy

	Local anesthesia patients no.	General anesthesia Patient no.	Total No.	Percentage of all 95 patients
bleeding	0	2	2	2%
Sever post-operative pain	2	4	6	7%
incontinence	1	2	3	4%
recurrence	1	2	3	4%
Total	3	9	14	17%

Table 3: impact of anesthetic technique on duration of hospital admission

Hospital stay in hours	local anesthesia in 54 patients	General anesthesia In 41 patients	Significance in a results
0.5-2 hours	37 patients (69%)	0.0%	<i>Significant; P value <0.001</i>
2-12 hours	11 patients (20%)	10 patients (20%)	No significance
12-36 hours	6 patients (11%)	31 patients (80%)	<i>Significant; P value <0.001</i>

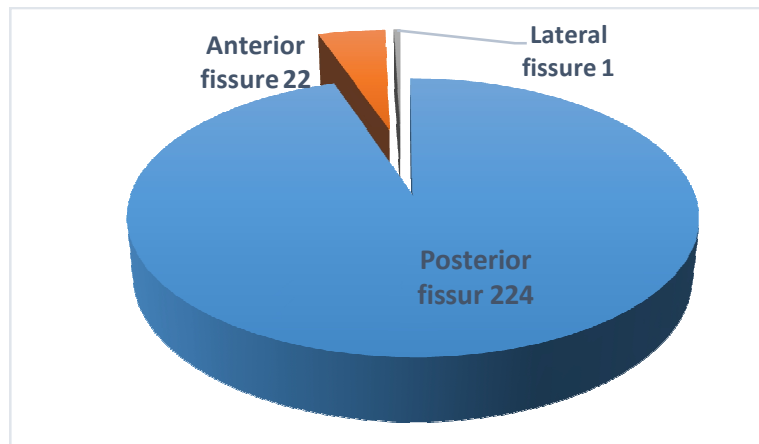


Figure 1: No. of patient's distribution of anal fissure according to the site

Discussion

In a present study, the sex distribution was equal. The site distribution of anal fissure was mainly posterior (95%) and only 5% was anterior that detected in females except in one male with anterior fissure. These result approximates other studies data [1, 17, 19]. Lateral fissure was diagnosed in one male that was irregular and deep with a further evaluation revealed a rectal adenocarcinoma. The incidence of lateral fissure in this study is low (less than 0.4%) may be because of small sample group. Age distribution show a main incidence at age group of 31 to 40 years old that agrees with other studies of same interest [26, 27].

Healing respond to conservative treatment in this study was about 60% of patients with benign anal fissure, this percentage is the same or a little higher than 50% reported in other studies [4, 10]. Topical glycerin trinitrate (GTN) and nifedipine are used with a good response that was well tolerated without reported side effects like a head ache or drowsiness [2, 3, 12]. Oral (systemic) GTN or calcium channel blockers, as nifedipine or diltiazem did not used in a treatment of anal fissure in this study to avoid systemic side effects. Topical GNT was presented to the patients by

pharmaceutical hand preparation at a concentration of 0.2% in a lidocaine jell.

Recurrence of anal fissure following conservative treatment was reported in 32 patients following a two months of healing and pain relief (18% of initially responded patients), this percentage of recurrence is a little higher than other studies that reported about 11% recurrence [15] that may be due to a persistent constipation because of dehydration with a hot climate in Iraq.

Surgical intervention were performed to the patients with a recurrent fissure or to resistant for conservative treatment. The aim of surgery is to relieve spasm and lower the resting anal pressure [19]. Lateral sphincterotomy was performed to all surgically treated patients in this study by a local or general anesthesia. Anterior or posterior sphincterotomy at exposed fibers of the internal sphincter in the fissure base *did not* performed in this study as it is associated with a prolonged healing, as well as passive anal leakage thought mainly to be due to the resulting keyhole gutter deformity [1]. Sphincterolysis (finger dilatation under general anesthesia) did not performed in this study, as it may associate with a higher incidence of incontinence [1] and considered to be abundant now [16]. Local anesthesia is

used in 60% of surgically treated patients show the same cure rate and complication rate (if compared with general anesthesia) with a good patient acceptance and a significant time and cost effectiveness, a fact that goes with a results of other studies regarding local anesthetic approach in surgical sphincterotomy [1,19-25]. Recurrence of fissure was reported in only 3 patients after surgery (4%) that approximate results of other study (5%)[12]. Incontinence of flatus was reported in only 3 patients considered a quite satisfactory result (4%). In a recent studies there has been a growing interest in a sphincter-sparing surgical techniques, especially that of fissurectomy either alone or in combination with other techniques (e.g. botulinum toxin injection or advancement flap) [17].

Conclusion

The management of primary anal fissures should follow first-line conservative medical therapy for up to 6–8 weeks. Patients not responding to these measures should be referred for surgery. Lateral sphincterotomy is a safe well tolerated procedure can be performed safely under local or general anesthesia with excellent outcome and low complication rate. Laterally located or multiple fissures should be assessed properly to exclude serious hidden primary pathology.

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