

# Chemical sphincterotomy is good alternative option to surgery

## In Management of chronic fissure in ana

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**Abstract:**Anal fissure is a common disorder which may cause symptoms at any age. Internal anal sphincterotomy is the gold standard surgical treatment which lowers the resting anal pressure and effectively heals the majority of fissures. However the post operative period may be marked by surgical risks, complications and late incidence of incontinence that is some times permanent. These complications have led to a search for alternative therapies for the treatment of chronic anal fissure. Chemical sphincterotomy has been tried using a variety of novel agents including topical glyceryl trinitrate (GTN), calcium channel blockers such as nifedipine or diltiazem and botulinum toxin. Some of these agents were found to be effective in healing chronic anal fissure with negligible side effects and are now considered as first line treatment for chronic anal fissure.

### Methods

This study has been conducted in Al-thawara teaching hospital Albeida-Libya and AL-karama teaching hospital and private clinic on 105 patients from the period January 2009 to march 2016 using diltiazem 2% gel or glyceryl trinitrate and the result was promising.

### Results

We found that 70 patients out of 105 heal completely with the use of these topical publications for one month and half and without surgery that means this type of treatment is encouraging and promising and can ovoid the patient the risk of surgery and its complications.

**Keywords,** diltiazem gel, nitroglycerin in treatment of chronic fissure in ano.

### المخلص

استخدام العلاج الكيماوي في علاج الفطر الشرجي المزمن كبديل للعملية الجراحية وتبين لي ذلك من خلال دراسة اجريتها على مرضى في مستشفى الثورة التعليمي البيضاء ليبيا وفي مستشفى الكرامة التعليمي بغداد وعيادتي على مرضى يعانون من مرض الفطر الشرجي المزمن وعددهم ١٠٥ مرضى.

**النتائج** سبعون مريض من مجموع مائه وخمسة مرضى استخدموا العلاج لمدة شهر ونصف تماثلوا للشفاء التام وكانت الدراسة من كانون الأول ٢٠٠٩ الى ٢٠١٦.

**استنتاجات** نستنتج من الدراسة بان العلاج الكيماوي للفطر الشرجي المزمن فعال وامن وبدون مضاعفات مقارنة بالعملية الجراحية التي ممكن يحدث فيها مضاعفات كعدم السيطرة على الهواء الذي يخرج من الشرج او البراز.



**chronic fissure in ana**

## **Introduction**

Fissure in ano, a common disease under this category, first described by Recamier [2] in 1829, is a vertically oriented tear or ulceration in the squamous lining of the anal canal between the pectinate line and anal verge. This condition is associated with pain

on defecation, bleeding per anum and anal sphincter spasm. It can affect all age groups particularly young and otherwise healthy adults but shows no sex preponderance. Most of the anal fissures are acute, resolving spontaneously or with increased dietary fibre intake and stool softeners where appropriate. Those lesions which fail to heal despite simple lifestyle modifications and persist beyond six weeks are designated as chronic anal fissures. The most common location for fissure-in-ano in both men and women is posterior due to oval shaped sphincters that are best supported at their sides and weakest posteriorly. Anatomic and microscopic studies of cadaveric specimens have revealed poor blood supply to posterior part of anal canal in 85% cases. The posterior anal commisure is poorly perfused and hence in patients with hypertrophied internal sphincters this blood supply is further compromised rendering the area relatively ischemic [3,4]. In women, there is deficient support anteriorly due to presence of the vagina; therefore 10% of fissures in women are anterior unlike males where the incidence is only 1%. Perineal trauma during childbirth also causes a tear extending into the anoderm. Early or acute fissures have the appearance of a simple tear in the anoderm. With the passage of time, chronic fissures develop thickened skin margins, and fibres of the internal anal sphincter become visible at the fissure's base. Many patients develop a sentinel skin tag at the distal aspect and a hypertrophied anal papilla proximally. (It has been generally accepted that hypertonicity of the internal anal sphincter is involved in the pathogenesis of anal fissure. A vicious cycle ensues whereby the anal spasm exacerbates the ischemia and prevents the fissure from healing, which in turn sustains the anal spasm to prevent further tearing. Once this cycle sets in, the likelihood of spontaneous healing decreases. Therapy focuses on breaking the cycle of pain, spasm, and ischemia thought to be responsible for development of fissure in ano. Surgical techniques like manual anal dilatation or lateral internal sphincterotomy, effectively heal most fissures within a few weeks, but may result in permanently impaired anal continence. This has led to the research for alternative non-surgical treatment, and thus 'Chemical Sphincterotomy' is being investigated and used as the possible first line of treatment for chronic anal fissure. Topical Glyceryltrinitrate (GTN) ointment has been shown to be effective but has reduced compliance due to headache as side effect. Topical 2% diltiazem gel has been reported to cause healing of chronic anal fissures in 60-75%, with less than 80% patients having no adverse effects in previous studies [6]. Calcium channel blockers like diltiazem and nifedipine offer a very attractive alternative to nitroglycerine for the treatment of anal fissures. They act by blocking L-type calcium channels in smooth muscle causing relaxation of the internal sphincter [7]. They also dilate the blood vessels of the ano derm and increase the flow of blood. Healing rates of chronic fissures has been reported in up to 73% [for surgical sphincterotomy can be avoided in up to 70% of cases. In a study fissure but the former resulted in fewer sideeffects. The present study comprises of 2% Diltiazem gel application in the treatment of chronic fissure in ano with respect to both efficacy and complications.

**Method ,collection of data, and result** This study was conducted on patients attended outpatient clinic at ALThawara teaching hospital in Libya and ALkaram teaching hospital and private clinic from the period january 2009 to march 2016 with clearance from the ethical committee. With informed consent of the patient, detailed history was taken and per-rectal examination done to diagnose chronic anal fissure.

Patients with haemorrhoids, anorectal abscess, anal malignancies and tuberculosis of anorectal region were excluded from this study. Patients with previous history of faecal incontinence or anal stenosis and those who had undergone previous anal surgeries were not included. Immunocompromised patients and those with history of bleeding diathesis were also not taken up. Systemic examination was done. Baseline clinical photographs were taken. 105 patients were randomly subjected to chemical sphincterotomy which involved local application of 2% Diltiazem gel thrice a day, for a period of 12 weeks. They were advised plenty of oral fluids, high fibre diet, laxatives and sitz bath. Follow-up of the patients was done by history and per-rectal examination to assess the effectiveness of treatment. I found more than 60% of patients involved in this study was healed successfully without surgery.

## **Discussion**

Fissure-in-ano is a common problem across all parts of the world, causing considerable morbidity and affecting the quality of life of the patients. This necessitates the prompt treatment of the condition with suitable, cost-effective methods. The rationale of treating this condition lies in reducing the internal anal sphincter tone, relieving the spasm and thereby improving the local circulation which is necessary for the healing of the ulcer (fissure). Lateral internal sphincterotomy (LIS) has been considered as the gold standard in the treatment of anal fissure, wherein, there is partial division of the internal anal sphincter away from the fissure site. Chemical sphincterotomy, a medical line of treatment, is now being accepted as the first line of treatment for chronic anal fissures at various centres. Previous studies have found that diltiazem is efficacious in the treatment of chronic anal fissure. Studies showed that oral intake and topical applications of diltiazem reduced the anal pressure significantly [12]. Diltiazem gel for topical application was done with regards to efficacy and complications in patients with chronic anal fissure. The current study included a total of 50 patients of chronic anal fissure who presented to the surgical out-patient in our hospital between July 2010 and June 2012, and were randomly subjected to chemical sphincterotomy. Patients with complaints of painful defecation with or without bleeding per rectum of more than 6 weeks duration were labelled as chronic fissure-in-ano and considered for this study. Patients were advised local application of 2% diltiazem gel thrice a day, for a period of 8 weeks. They were adequately followed up at regular intervals and the final data was analyzed according to the proforma sheets. In the present study, the age group most affected was 31-40 years (38%) and least affected was 51-60 years (8%). According to J.C. Goligher [13] the disease is usually encountered in middle aged adults. In Udwadia T.E [14] series also maximum incidence was seen in 31-40 years age group. There was a slight male preponderance (58%) compared to females (42%) in our study with the male to female ratio of 1.38:1. The study from Goligher [13] which says anal fissure is equally common in the two sexes. In our analysis, painful defecation was a universal and the most common symptom (100%). This was followed by constipation and bleeding per anum in 82% and 74% of the patients respectively. Local pruritus was present in 10% of the patients and so was discharge per anum. The presence of posterior anal fissure was noted to be 93.1% (27 out of 29 patients) in males and 90.48% (19 out of 21 patients) in females. The overall incidence of posterior anal fissure was found to be 92% making it the most common site involved. Anterior anal fissure

was noted in 3.45% of male and 9.52% of female patients. This is in conjunction with the study from Boulos [15] which says posterior fissure (85.7%) is more common than anterior fissure (14.2%). In this study, fissure was completely healed in 42 (89.36%) out of 47 patients by 8 weeks. Study (Table 2) conducted by J. S. Knight [16] et al reported a healing rate of 75% after 8-12 weeks treatment with Diltiazem gel. U. K. Srivastava [17] reported a healing rate of 80% with Diltiazem gel in 12 weeks. In our study, out of the 47 patients that were followed up in the Diltiazem group, 3(6.2%) patients experienced mild headache and local irritation was present in 2(4.3%) patients. None of the patients reported to have features like dizziness, flushing or palpitations. Study conducted by U. K. Srivastava reports no side effects in patients treated with Diltiazem gel [17]. In a study conducted by G. F. Nash et al [19] 112 patients were treated with 2% Diltiazem gel for 6 weeks and were followed up over 2 years. The success rate and satisfaction of topical Diltiazem were each over two thirds. Nearly of 80% .

## **Conclusion**

Internal lateral surgical sphincterotomy has stood the test of time and till today is an effective treatment option for chronic anal fissure in regards to efficacy, rapid relief of pain, minimal side effects. However, chemical spinctertomy with use of topical 2% Diltiazem can be administered as a first line of management to avoid surgery in those who are not fit for surgery and those who are at risk for complication.

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