Investigated Lateral Sphincterotomy versus 2% Diltiazem Gel Local Application in the Treatment of Chronic Fissure in ANO

Associated Professor Dr Barat Gul Meherzai
Associated Professor Dr Gulaqa Sadat

Lecturers of General Surgery and Urology Department

Nangarhar medical faculty.

Abstract

An anal fissure is a split in the anoderm over the hypertrophied band of internal sphincter at the anal verge fissure is almost always located close to the midline of the anal canal; in men, 95% are near the posterior midline and 5% near the anterior midline, whereas in women, about 80% will be located posteriorly and 20% anteriorly.

In this study we compare symptomatic relief, healing and side effects of topical 2% Diltiazem gel and lateral internal sphincterotomy in the treatment of chronic fissure in ANO.

In this prospective trial, 58 surgical out patients and/or admitted patients with chronic fissure in ANO was randomly divided into Group 1 (Diltiazem gel) and Group 2 (internal sphincterotomy) with 25 patients in each Group. Patients were followed up at weekly intervals for six consecutive weeks and biweekly for subsequent 3 months.

Fissure was completely healed in 85.45% of patients in Group 1 and in 96.60% in Group 2. The mean duration required for healing of fissure was 5.02 weeks in Group 1 and 3.8 weeks in Group 2. 65.00% patients were free from pain in Group 1 whereas 70.98 % patients were free from pain in Group 2. No patient had any side effects in either group.

Keywords: Anal fissure, Chemical sphincterotomy, Surgical sphincterotomy.

Introduction

An anal fissure is a split in the anoderm over the hypertrophied band of internal sphincter at the anal verge fissure is almost always located close to the midline of the anal canal; in men, 95% are near the posterior midline and 5% near the anterior midline, whereas in women, about 80% will be located posteriorly and 20% anteriorly. precise cause of an anal fissure has yet to be determined. However, fissures probably are related to tearing of the anoderm at the time of defecation. increased anal canal pressure that accompanies an anal fissure is associated with ischemia in the area of the fissure and prevents healing, as spasm recurs with each bowel movement.38 An anal ulcer is the chronic form of an anal fissure with heaped-up edges, sentinel skin tag, and occasionally hypertrophied anal papilla (14) . Anal fissures are commonly encountered in routine clinical practice. Anal fissure has traditionally been treated surgically. Developments in the pharmacological understanding of the internal anal sphincter have resulted in more conservative approaches towards treatment. anal fissures are considered one of the commonest causes of severe anal pain. An anal fissure is a longitudinal tear or ulcer in the distal anal canal. It is usually located in the posterior or anterior midline and extends from the level of dentate line to the anal verge. Acute fissure is one which presents within 3-6 weeks of symptom onset. It has the appearance of a clean longitudinal

tear in the anoderm with little surrounding inflammation. Acute fissure usually heals spontaneously within 6 weeks. A chronic fissure, with more than 6 weeks of symptoms, is usually deeper and generally has exposed internal sphincter fibers in its base. It is frequently associated with a hypertrophic anal papilla at its upper aspect and sentinel pile at its distal aspect. Based on etiology it is classified as primary (idiopathic) or secondary. Secondary fissures are those that occur due to some other pathology such as Crohn's disease, anal tuberculosis, AIDS. Patients usually present with pain during defecation and passage of bright red blood per anus. The precise etiology of anal fissure is unknown. Fissure is most commonly attributed to trauma from the passage of a large hard stool, but it is also seen after acute episodes of diarrhea (12). Painful fissures are generally associated with involuntary spasm of the internal sphincter with high resting pressure in the anal canal. So it seems that chronic over activity of the internal sphincter may be the cause. Reduction of anal sphincter spasm results in improved blood supply and healing of fissure. Surgical techniques like manual anal dilatation or lateral internal sphincterotomy, effectively heal most fissures within a few weeks(11), but may result in permanently impaired anal continence. This has led to the research for alternative non-surgical treatment, and various pharmacological agents such as nitrates (glyceryl trinitrate, isosobide dinitrate), calcium channel blockers (nifedepine, diltiazem) have been shown to lower resting anal pressure and heal fissures without threatening anal continence (8). The present study compares the effectiveness and side effects of 2% Diltiazem gel local application and internal sphincterotomy in the treatment of chronic fissure in ano. Symptoms and Findings. Anal fissure is extremely common. Characteristic symptoms include tearing pain with defecation and hematochezia (usually described as blood on the toilet paper). Patients may also complain of a sensation of intense and painful anal spasm lasting for several hours after a bowel movement (3). Anal fissure is the most common cause of severe anal pain. It is equally one of the most common reasons of bleeding per anus in infants and young children. The pain of anal ulcer is intolerable and always disproportionate to the severity of the physical lesion. It may be so severe that patients may avoid defecation for days together until it becomes inevitable. This leads to hardening of the stools, which further tear the anoderm during defecation, setting a vicious cycle. The fissures can be classified into (1). Acute or superficial and Chronic fissure in ano (6).

Methodology

This prospective, comparative study was undertaken at the hospital of Medical faculty of Nangarhar University from (14th April 2017) to (27th April 2019). 58 patients with symptoms of fissure in ano for more than 6 weeks were labeled as having chronic fissure in ano and were enrolled in this study after obtaining an informed written consent. Ethical approval was obtained from the local ethical committee. Inclusion criteria included patients between 18 to 64 years of age of both sexes. Exclusion criteria included children and mentally patients, recurrent fissures, fissures with hemorrhoids and fistula, fissures secondary to specific diseases like Tuberculosis, Crohn's disease etc., and pregnant women. Patients in Group 1 were advised to apply 1.5 to 2 cms length of gel twice daily at least 1.5 cm into the anus for 6 consecutive weeks. Patients were instructed to wash hands before and after use of gel. Cases in Group 2 underwent left lateral internal sphincterotomy under spinal anesthesia. Cases from both Groups were asked to take mild laxatives like luxomage three teaspoons at bedtime, high fiber diet and to use warm sitz baths. Cases were reviewed in Outpatient Department weekly for 6 consecutive weeks and biweekly for subsequent 3 months. At each

visit questions were asked regarding pain relief, leakage of flatus/feces, and any side effects. Healing was assessed visually and defined as complete disappearance of fissure. Pain was assessed using a pain score chart graded from 0 (almost pain free) to IV (severe pain). The data was collected and analyzed; p-values were calculated using Chi Square test.

Findings

This research is conducted in Nangarhar medical faculty and Nangarhar public health hospital's surgery ward. In our study most of the cases belonged to age Group 22-32 years the finding are:

Table-1: with slight male preponderance.

No	Sex	No of patients	Percentage
1	Male	33 person	56.8%
2	Female	25 person	43.1%

Table-2: sites of fissure: Majority of the fissures were posterior in location.

N0	Sites of fissure	% in male	% in female
1	Posterior	95%	8o%
2	Anterior	5%	20%

Table-3: sentinel pile present.

No	No of patients	Sentinel pile %
1	58 person	45.04%

With sentinel pile present in 45.04% of cases. Cases were followed up at weekly intervals for 6 consecutive weeks and biweekly for subsequent 3 months. Four cases from Group 1 and 3 cases from Group 2 were lost to follow up and hence not included in statistical analysis. 75.86% of patients in Group 1 and 89.65% of patients in Group 2 had completely healed fissures at the end of 4 weeks.

Table -4: Healing at 4 weeks.

No	Healing	No of patients	Percentage
1	Diltiazem	22	75.86%
2	Surgery	26	89.65%

75.86% of patients in Group 1 who were completely healed with Diltiazem gel application and 58.62% of patients in Group 2 were free from pain at the end of 3 months.

Table -5: Pain Relief at 4 weeks

No	Pain free	No of patients	Percentage
1	Diltiazem	17	58.62%
2	Surgery	22	75.86%

Three patients in Group 1, whose fissures did not heal after 6 weeks of Diltiazem application and remained symptomatic, subsequently underwent internal sphincterotomy and fissures healed in 4 weeks after surgery. The mean duration of healing was comparatively longer in Group 1(5.04 weeks) than Group 2 (3.6 weeks). No complications were reported in either Group. Comparison between Group 1 and Group 2 did not show any difference in pain relief (p= 0.5261) or fissure healing (p= 0.0679).

Discussion

If we compare the results of our research with the results of the research that was undertaken at Bowring and Lady Curzon Hospitals attached to Bangalore Medical College and Research Institute, Bangalore, India, from September 2009 to September 2011. so there isn't so much difference between both of them. Anal fissure is a very common problem across the world. It causes considerable morbidity and adversely affects the quality of life. Anal fissure is usually encountered in young or middle aged adults and is equally common in both sexes. It is commonly found in the posterior position, although anterior fissure is comparatively common in females. Therapy focuses on breaking the cycle of pain, spasm, and ischemia thought to be responsible for the development of fissure in ano. Operative management includes anal dilatation and lateral internal sphincterotomy. Lateral sphincterotomy is perhaps the operation of choice to perform in patients with chronic anal fissure needing surgical treatment. complication such as permanent anal incontinence is associated with the surgery. Calcium channel blockers like Nifidipin and diltiazem have been shown to lower resting anal pressure promote fissure healing and are associated with good healing rat. They are associated with side effects such as headache and perianal dermatitis. Healing rates of chronic anal fissure in various studies ranged from 47%-80% while that seen in our study is 82.75%. Side effects due to Diltiazem ranged from 0%-11% in various studies while no patient developed side effect in our study. In contrast to surgery, chemical sphincterotomy with Diltiazem is reversible and therefore unlikely to have adverse effects on continence. Patients who are hypertensive, diabetic and medically unfit for surgery can be recommended treatment with Diltiazem. Though fissure healing rate is comparatively slower with Diltiazem, the trauma caused by surgery can be avoided and hospital stay is not required. Treatment works out to be very cost effective.

Conclusion

Chemical Sphincterotomy with Topical 2% Diltiazem should be advocated as the first option of treatment for chronic anal fissure. Internal sphincterotomy should be offered to patients with relapse and therapeutic failure of prior pharmacological treatment.

Suggestion

1. Avoiding hard bowel movements will prevent trauma to the anal canal, promoting healing of the fissure.

2. Increasing fiber in the diet is one of the best ways to soften and bulk the stool. Fiber is found in fruits and vegetables. The recommended amount of dietary fiber is 20 to 35 g/day.

References

1. Bhardwaj R, Parker M. C. Modern perspectives in the treatment of chronic anal fissures. Annals of the Royal College of Surgeons of England. 2007;89 (5):472–78.

2. Boulos PB, Araujo JGC. Adequate internal sphincterotomy for chronic anal fissure: subcutaneous or open technique?. British Journal of Surgery. 1984;71 (5):360–62.

3. Brunicarde F. Charles, Anderson K. Dana…et al. editors. 2010 Schwartz's principle Of Surgery 10th ed. USA: McGraw– HILL: P. 1224.

4. Carapeti E, Kamm M, Evans B, Phillips R. Topical Diltiazem and Bethanechol decrease anal sphincter pressure and heal anal fissures without side effects. Diseases of the Colon and Rectum. 1999;43(10):1359–62.

5. Dasgupta R, Franklin I, Pitt J, Dawson PM. Successful treatment of chronic anal fissure with Diltiazem gel. Colorectal Disease. 4:20–22.

6.Goligher John, Anal Fissure, John Goligher. Surgery of the Anus, Rectum & Colon. AITBS. (5th Edition) 1992:150.

7. Haq Z, Rahman M, Chowdhury RA, Baten MA, Khatun M. Chemical sphincterotomy – first line of treatment for chronic anal fissure. Mymensingh Medical Journal. 2005;14 (1):88–90.

8. Jonas Marion, Scholefield JH. Taylor I, Johnson CD. Recent advances in Surgery. 24th Edition. Churchill Livingstone; 2001. Anal fissure and chemical sphincterotomy; p. 115.

9.Knight J. S, Birks M, Farouk R. Topical Diltiazem ointment in the treatment of chronic anal fissure. British Journal of Surgery. 2001;88(4):553–56.

10.Nash GF, Kapoor K, Saeb-Parsy K, Kunanadam T, Dawson PM. The long term results of Diltiazem treatment for anal fissure. International Journal of Clinical Practice. 2006;60 (11):1411-13.

11. Scouten WR, et al. Ischemic nature of anal fissure. British Journal of Surgery.1996; 83:63-65.

12.Tocchi Adriano, Mazzini Gianluca, Miccini Michelangelo, Cassini Diletta, Bettelli Elia, Brozzetti Stefania. Total lateral sphincterotomy for anal fissure. International Journal of Colorectal Disease. 2004;19(3):245–49.

13. Udwadia T.E. The prophylaxis of fissure in Ano. Indian Journal of Surgery. 1978;40(11):560.

14. Zinner. J MICHAEL, ASHLEY. W STANLEY, (2012), Maginot's abdominal operation. 12th ed. McGrahill.USA: p.840.