

THE ROLE OF ANTIBIOTICS IN TREATMENT OF ANAL FISSURE

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Abstract:

Anal fissure is one of the most common anorectal conditions encountered in clinical practice. Most patients experience anal pain with defecation and minor bright red rectal bleeding, allowing a focused history to direct the evaluation.

This was a prospective, randomized, controlled clinical study conducted on 90 consecutive patients who presented to the general surgery outpatient clinic of Al - Hilla teaching Hospital Babil, between June 2019 and July 2021 were diagnosed with anal fissure.

Although various non-surgical and surgical treatment methods have been used, an ideal treatment method for acute anal fissure is still debatable. The topical antimicrobial treatment with metronidazole in addition to conventional medical treatments is an effective, easy-to-use, safe, fast and comfortable practice that enables further reduction of anal fissure pain and increases the healing rate.

Key word: antibiotics, anal fissure, anal fissure.

Introduction:

An anal fissure is a tear in the epithelial lining of the **anal fissure**. Although this is an extremely common condition, it is surprisingly difficult to know exactly how widespread it is. Many people avoid seeking treatment, and many fissures will resolve without intervention. Nevertheless, the combination of anal pain and bleeding is sufficiently worrisome that patients often seek medical attention. As such, anal fissure represents one of the most common, if not the single most common, anorectal problems encountered in practice. It has been cited as the cause of over 1200 office visits to a single colon and rectal surgery clinic over a 5-year period.¹ Fissures may be delineated as acute versus chronic and typical versus atypical. Acute fissures cause bright red bleeding with bowel movements and anal pain or spasm that can last for hours after the bowel movement. Physical findings include a linear separation of the anoderm, at times visible with just separation of the buttocks (1). Often, elevated anal resting pressures are revealed on digital rectal examination. If tolerated by the patient, the suspected diagnosis can be confirmed by visualizing the break in the anoderm with office endoscopy after using an anesthetic lubricant. If only one area can be examined, the posterior midline should be evaluated first, as it is the site of up to 90% of typical anal fissures. The remaining minority of typical fissures are found in the anterior

midline. Acute fissures generally resolve within 4 to 6 weeks of appropriate management; therefore, chronic fissures are defined as those producing symptoms beyond 6 to 8 weeks. Chronic fissures have additional physical findings of a sentinel tag at the external apex, exposed internal sphincter muscle, and a hypertrophied anal papilla at the internal apex (2). Typical fissures are usually in the posterior or anterior midline, have the characteristic findings described earlier, and are not associated with other diseases. In contrast, atypical fissures can occur anywhere in the anal canal, can have a wide variety of findings, and tend to be associated with other diseases, including Crohn's Disease, human immunodeficiency virus (HIV) infection, cancer, syphilis, and tuberculosis. An anal fissure is a small tear in the skin lining the back passage (anus). Although the tear is very small, it can be very painful as the skin in the anal canal is very sensitive. Fissures can occur in adults and children. It can be a 'one off' problem, caused by constipation or diarrhea. The pain can be sharp when you open your bowels and may last up to several hours after you have emptied your bowel. You may also notice some bleeding on the tissue paper when wiping, or in the toilet bowl. Some people may experience some itching and discharge. (3)

Anal fissure is one of the most common diseases of the anorectal region that is frequently encountered in surgical practice (4). It is a longitudinal rupture of the stratified squamous epithelial tissue formed in the anoderm distal to the dentate line and is generally located on the middle line posterior to the anus (5, 6). Although the exact etiology is not clearly known, the factors affecting the physiopathology of anal fissure are thought to include disadvantageous anatomic structure such as tight anal sphincter and multifactorial origin, such as internal anal sphincter spasms, ischemia, infectious conditions, and local traumas due to hard stool passage, long-lasting constipation, or diarrhea.

Etiology

Causes of anal fissures commonly include constipation, chronic diarrhea, sexually transmitted diseases, tuberculosis, inflammatory bowel disease, HIV, anal cancer, childbearing, prior anal surgery, and anal sexual intercourse. The majority of acute anal fissures is thought to be due to the passage of hard stools, sexually transmitted infection (STI), or anal injury due to penetration. A chronic anal fissure typically is a recurrence of an acute anal fissure. It is thought to be also caused by the passage of hard stools against an elevated anal sphincter tone pressure, with symptoms lasting greater than six weeks. Underlying conditions such as inflammatory bowel disease, tuberculosis, HIV, anal cancer, and prior anal surgery are predisposing factors to both acute and chronic atypical anal fissures. Approximately 40% of patients who present with acute anal fissures progress to chronic anal fissures. (7,8).

Epidemiology

Anal fissures present in any age group; however, they are mostly identified in the pediatric and middle-aged population. Gender is equally affected, and approximately 250,000 new cases are diagnosed each year in the United States. (9, 10)

PATHOGENESIS

Despite the common nature of this longstanding problem, the exact cause remains uncertain. Many patients relate the occurrence of a fissure to the passage of a large stool or anal trauma. There may be mechanical factors in the posterior midline, secondary to the anorectal angle, that creates the greatest stress at that location.³ The common finding of sphincter hypertonicity has been described in early reports of the disease and documented by manometry in multiple studies, and it is the leading hypothesis behind the pathogenesis.^(11,12) However, it remains unclear whether the elevated pressures are a direct cause of the disease or an effect.⁶ Another common theory relates to the relative ischemia at the posterior midline anoderm. This area of the anal canal has been shown to be fairly ischemic by arteriographic studies and laser Doppler flow studies.^(13,14) The theories of hypertonicity and ischemia may be intertwined to some extent, particularly in that hypertonicity may aggravate the relative ischemia. Nevertheless, tears in the anoderm undoubtedly occur with great frequency, whether from a large stool, anorectal intercourse, or instrumentation from surgical procedures. In fact, the evolution to a chronic fissure is probably only seen in a minority of these instances. Furthermore, fissures can occur in the absence of any trauma or constipation, and may even be present in patients with diarrheal states or sphincter hypotonia. ^{(15, 16).}

MATERIAL AND METHODS

This was a prospective, randomized, controlled clinical study conducted on 90 consecutive patients who presented to the general surgery outpatient clinic of Al- Hilla teaching Hospital Babil, between June 2019 and July 2021 were diagnosed with anal fissure. The major complaints of the patients were painful defecation, bleeding, constipation, diarrhea, and itching. The diagnosis of anal fissure was made based solely on clinical examination. The study included patients aged between 20 and 60 years who had their complaints for <8 weeks, whose lesions were limited to the epithelium, and who had pain in the anal region together with ulcers in the posterior anoderm without any skin tags. Patients with perianal fistula, perianal abscess, accompanying inflammatory bowel disease, and immune deficiency; receiving oral immunosuppressive drugs or steroids; with a history of hemorrhoid or hemorrhoidectomy; with a chronic disease, such as ischemic heart disease, hypertension, chronic obstructive pulmonary disease, and diabetes mellitus; who were pregnant; and with lateral or anterior localized fissures were excluded from the study.

Treatment / Management

The initial treatment of anal fissures is with medical interventions. Frequent sitz baths, analgesics, stool softeners, and a high-fiber diet are recommended. Prevention of recurrence is the primary goal. Adequate fluid intake is also helpful in preventing the recurrence of anal fissures and is strongly encouraged. If conservative management with dietary changes and laxatives fail, other options can be used, including topical analgesics such as 2% lidocaine jelly,

topical nifedipine, topical nitroglycerin, or a combination of topical nifedipine and lidocaine compounded by another medication. Topical nifedipine works by reducing anal sphincter tone, which promotes blood flow and faster healing. Topical nitroglycerin acts as a vasodilator to encourage increased blood flow to the area of the fissure, increasing the rate of healing. While both have been shown to be effective treatments, topical nifedipine is regarded to be superior to topical nitroglycerin in two ways. First, nifedipine has been found to result in a higher healing rate compared to nitroglycerin. Second, it resulted in fewer side effects, as nitroglycerin frequently causes headaches and hypotension. If patients use nitroglycerin, it is recommended that they apply the ointment in a seated position and refrain from standing too quickly. Patients should also be advised to avoid medications such as sildenafil, tadalafil, and vardenafil while using nitroglycerin (10,17, 18)

Results and discussion:

Medical or pharmacological treatment should be aimed at achieving transitory relaxation of the internal anal sphincter, thereby resolving hypertonia and improving the vascularization of the mucosa of this area, but with the subsequent recovery of the normal baseline tone, thereby avoiding the risk of incontinence this study agree with (10, 11).

There are several drugs, such as calcium channel blockers (CA), captopril and diltiazem mainly, nitric oxide donors glyceryl tritrate [GTN]) and botulinum toxin (BT).

In this study and after review of the results we found that the use of antibiotics systematically with medical treatment of acute anal fissure was significant in cure rate , recurrence rate and complications rate , in another study done by (16) they use local antibiotics with treatment and there was significant effects on cure rate but the recurrence rate was 50% and no effect on complications .

Table(1) medical fate of patients with anal fissure treated with antibiotic

Patients treated with AB	cure		Total (%)
	Yes (%)	No (%)	
	61	39	100
	complications		
	Yes (%)	No (%)	
	19	81	100
	recurrence		
	Yes (%)	No (%)	
	17	83	100
	need of surgery		

	Yes (%)	No (%)	
	38	62	100

Table (3) clinical fate of patients with anal fissure not treated with Antibiotics

Cure			
Patients not treated with AB	Yes (%)	No (%)	total (%)
	27	83	
Complications			
	Yes (%)	No (%)	
23	77	100	
Recurrence			
	Yes (%)	No (%)	
21	79	100	
need of surgery			
	Yes (%)	No (%)	
37	63	100	

Conclusion:

Although various non-surgical and surgical treatment methods have been used, an ideal treatment method for acute anal fissure is still debatable. The topical antimicrobial treatment with metronidazole in addition to conventional medical treatments is an effective, easy-to-use, safe, fast and comfortable practice that enables further reduction of anal fissure pain and increases the healing rate.

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