Overview of the Updated Management of Anal Fissure

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ABSTRACT

Background: Anal fissure is a longitudinal defect in the skin of the anal canal, which is common, mostly benign, and may be acute or chronic. The tear is usually superficial in the skin distal to the dentate line. Anal fissure is classified as acute and chronic. Thy typical symptoms are anal spasm, pain, and/or bleeding with defecation. Aim: In this review, we will look into the epidemiology, etiology, and updated management of anal fissure. Conclusion: Anal fissures are typical presentations to the emergency room and the primary care provider. Even if they are benign, they can lead to severe pain and impair the quality of life. Anal fissures are better handled by the inter-professional team. The disease can be handled in several ways; but, when conventional therapy fails, it is important to refer the patient to a colorectal surgeon who has greater experience with this disorder than any other health care provider. Atypical anal fissures associated with Crohn's disease or HIV should be treated with caution.

Key Words: *anal fissure, management of anal fissure, updated management of anal fissure, fissure surgery*

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INTRODUCTION

Anal fissure is a longitudinal tear or defect in the anal canal skin, which is common, mostly benign, and may be chronic or acute. The tear is usually superficial in the skin distal to the dentate line [1]. The precise etiology of anal fissure remains unclear. Anal fissure is typically due to injury or hard stools or constipation. Anal fissures are prevalent in both children and adults, and those with a history of constipation seem to have a higher risk to suffer from anal fissures [2]. anal sexual intercourse, prior anal surgery, inflammatory bowel disease, tuberculosis, childbearing, anal cancer, sexually transmitted diseases (HIV), and chronic diarrhea are causes of anal fissure [3]. Most anal fissures are primary and usually occur at the posterior midline or the anterior midline sometimes. The atypical or secondary fissure can occur due to other conditions that require further management [4].

Anal fissure is classified as acute and chronic. A chronic anal fissure is an ischemic ulcer [5]. The discrepancy between acute and chronic fissures is subjective, but fissures worsening within 6 weeks even though direct measures are elected as "chronic". Although <10% of patients with chronic fissures will finally resolve with traditional measures, most will require further management to heal [6].

Thy typical symptoms include anal spasm, pain, and/or bleeding with defecation. Physical examination by kind separation of the buttocks and check the anus and identify a linear separation of the anoderm at the lower half of the anal canal is the first line of diagnosis [7].

Few patients with chronic fissures heal without intervention but the majority doesn't. The management of chronic anal fissure aims to reduce the spasm of the internal anal sphincter and anal canal pressure. This has been accomplished surgically by sphincterotomy in the past, by dividing part of the internal anal sphincter, but recently many pharmacological agents have shown lower resting anal pressure and promote healing [8]. Regarding acute conditions, more than 90% of them heal spontaneously or with simple management. An increased intake of water with a fiber-increased diet is suggested, laxatives may be

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required for stool softening in case of constipation, while warm sitz baths may offer symptomatic relief [9].

In this review, we will look into the epidemiology, etiology, and updated management of anal fissure.

Epidemiology:

Anal fissures present in any age group especially in children and adolescent populations. Approximately 250,000 new cases are identified annually in the US with both genders affected [10]. The most frequent location for males and females is the posterior midline, with more than 75% occurring at this location. About 25% of fissures occur in the anterior region and are more prevalent in women. Less than 1% of fissures are found off the midline area and are known to be atypical fissures [11].

Etiology:

The precise cause of anal fissure is unclear, however, it is assumed to be caused by trauma to the anal canal. Etiology of an atypical fissure includes leukemia, herpes, syphilis, HIV, tuberculosis, anal cancer, ulcerative colitis, and Crohn's disease. Trauma to the anoderm during the passage of hard stool, irritation caused by anoreceptive intercourse, anorectal surgery, and diarrhea [12]. Patients typically experience increased pressure within the anal canal in response to anal fissure. Many studies reported that the internal anal sphincter resting pressure in patients with fissures is higher than the normal ones [13].

The relative ischemia of the posterior anal canal is another potential cause. Postmortem angiographic tests have found that there is reduced blood flow to the posterior anal canal, which may also justify the elevated incidence of posterior midline fissure [14]. Contusion of the blood vessels moving vertically through the internal sphincter muscle in the posterior midline can also affect the blood flow with decreased anal tone [15].

Diagnosis:

In most cases, patient history and physical examination allow diagnosing the anal fissure with no more investigations [16]. The clinical features include; severe tearing pain during defecation often with a little bright red blood on the toilet paper or stool, anal pain that is worse during defecation, bleeding with bowel movements but usually not frank hemorrhage, and pain that continues for hours after defecation [17]. Patients with chronic anal fissure may have painful defecations with or without rectal bleeding for several months or years. In acute cases, the fissure may appear as superficial longitudinal proximally extending laceration [18].

However, examination after anesthesia with endoscopy, anoscopy, imaging (i.e. CT scan, MRI, or endoanal ultrasound), and biopsy may be necessary if the fissure cannot be seen by bare eyes, the diagnosis is unclear, there is bright red bleeding with an elevated risk for colorectal cancer, and the features suggest a secondary anal fissure [19].

If the diagnosis of a primary anal fissure is in question, like in the case of an anal fissure in an area other than the posterior zone, or in the presence of multiple anal fissures or painless anal fissures that are not healed by treatment, a biopsy anesthesia test and correct cultures are necessary [8]. Anal fissure may be misdiagnosed with other cases that cause anal pain like an abscess, pruritus ani, anal fistula, condyloma, cancers, Crohn's disease, ulcerative colitis, tuberculosis, sexually transmitted diseases, HIV, leukemia, and AIDS [20]. Patients with underlying disorders such as Crohn may have anal fissures at the primary locations.

Updated Management:

There is not any clear guideline on the management of anal fissure. Management aims to break the anal sphincter spasm cycle and improve blood flow into the fissured area, leading to healing [21]. Most of the primary anal fissures can be medically managed. Conservative measures including only warm bathing of the perineum (sitz baths) and increased intake of fiber (e.g. psyllium) can improve about 50% of cases with acute anal fissure with a recurrence rate of 18.6% [22-24]. Warm sitz baths can heal anal fissures by a somatoanal reflex, leading to the relaxation of the internal anal sphincter [25].

NONOPERATIVE MANAGEMENT:

Non-operational therapy targets are simple and consist of three elements. The first aspect is the elimination of the underlying pathology, which is responsible for fissure formation. Sometimes this means alleviating constipation and pressure, as well as preventing other causes of anal trauma, the second part includes relaxing the internal anal sphincter to increase blood flow and to make healing possible and the third aspect is to reduce the symptoms from the fissure, which are typically pain and bleeding [26].

Frequent sitz baths, analgesics, and laxatives may be required to soften constipated stool and a high-fiber diet with an increased intake of water are recommended [27, 28]. These actions are safe, have few complications, and should be the primary therapy for all patients with anal fissure [29].

Pharmacological treatments include using muscle relaxants, usually topical and sometimes oral medications. If conservative management fails, other options can be used, which include topical analgesics [28]. The preparations used in clinical practice contain glyceryl trinitrate or calcium channel blockers (CCBs), muscarinic agonists, β-adrenoreceptor agonists, α-adrenoreceptor antagonists, and botulinum toxin. Gonyautoxin is a newer pharmacological agent under test, which is a shellfish-derived paralytic neurotoxin [30].

Topical nitroglycerin, as a vasodilator, increases blood flow into the fissure area and accelerates healing. A recent study on Cochrane showed that topical glyceryl trinitrate improved anal fissure better than placebo (healing rate of 49% and 36%, respectively). However, 50% of initially cured patients experienced late recurrence. Moreover, pooling results of the studies using oral or topical medications have shown that CCBs have efficacies similar to topical glyceryl trinitrate [31].

CCBs block the calcium influx into the cytoplasm of smooth muscle cells and consequently relax the internal anal sphincter [32]. Both diltiazem (2% cream) and nifedipine (0.2–0.5% gel) decrease mean anal resting pressure and promote fissure healing [33]. Current evidence does not support the use of oral rather than topical CCBs in the treatment of anal fissures [34].

hydrocortisone and lignocaine are other topical medications that are usually used in clinical practices. But, they have lower healing rates than warm sitz baths plus bran [35].

OPERATIVE MANAGEMENT:

When conservative measure fails, surgery is the next step in the treatment of anal fissure. Lateral internal sphincterotomy (LIS) as a gold standard surgical operation is still the surgical management of choice for refractory anal fissures and the practice parameters by the American Society of Colon and Rectal Surgeons may offer it with no pharmacologic treatment failure [36]. This procedure generally involves the division of the internal anal sphincter from its distal end to either the dentate line or the proximal end of the fissure (whichever comes first) [32]. LIS is associated with a very low recurrence rate of <10% and can heal >90% of fissures refractory to medical therapy within 8 weeks [37]. Although LIS is curative in almost all patients with anal fissure, it has side effects that the healthcare provider should tell the patient before operation; The main complication is fecal incontinence, which occurs in the immediate postoperative period in about 45% of patients with a higher probability in females (50% versus 30% in males) [28]. Also, recurrence may occur in up to 6% of patients [31].

Given the potential risk of incontinence with surgery, in the last decade, there has been considerable investigation and interest in the use of pharmacological agents to reduce anal pressures and avoid surgical intervention.

CONCLUSION:

Anal fissures are typical presentations to the emergency room and the primary care provider. Even if they are benign, they can lead to severe pain and impair the quality of life. Anal fissures are better handled by the inter-professional team. The disease can be handled in several ways; but, when conventional therapy fails, it is important to refer the patient to a colorectal surgeon who has greater experience with this disorder than any other health care provider. Atypical anal fissures associated with Crohn's disease or HIV should be treated with caution.

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