

Corridor Consult

Anal Fissure: A Common Cause of Anal Pain

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Vignette

A patient presents with severe anal pain, lasting hours after each bowel movement. She notices some intermittent bleeding with defecation. She comes to the office with the presumed diagnosis of hemorrhoids. Are her symptoms consistent with hemorrhoidal disease, or does she have another disorder?

Introduction

Benign anorectal disorders are common and increasing in incidence. The decreasing intake in dietary fiber over the 20th century and into the 21st has contributed to a steady rise in preventable anorectal disorders. It is estimated that 20% of the American public has such benign conditions.¹ Although hemorrhoids represent the most common benign anorectal disorder, anal pain is most often secondary to an acute or chronic anal fissure and not hemorrhoidal disease.¹⁻¹⁴

Pathophysiology and Presentation

An anal fissure is a tear or a cut in the anoderm (Figure 1). Constipation and passage of hard stools is often the cause of an anal fissure, although diarrhea can also contribute to its development. Most anal fissures are located in the midline and are posterior more frequently than anterior. Anterior fissures are seen more often in women. Most fissures heal spontaneously, but some persist. It is believed that the decreased blood flow to the midline portion of the anus contributes to a relatively ischemic milieu that becomes more profound secondary to the associated sphincter spasm noted in the majority of patients with anal fissure.^{8,10} The anal spasm is a defense mechanism to prevent further stretching of the anal canal and worsening of the tear. 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 and the edges of the fissures become more fibrosed, leading to a chronic fissure.

Some fissures can be minimally symptomatic, but most patients present with severe pain, bleeding, or itching. The pain can be localized to the anus but can radiate to the buttocks, upper posterior thighs, or lower back. Often the pain is triggered by a bowel movement, can last for hours, and can be severe. Bleeding is usually not significant. Most patients with fissures have a history of constipation.

Table 1. Causes of anal pain

| |
|---|
| Thrombosed external hemorrhoids |
| Anal fissure |
| Anal abscess |
| Herpetic ulceration/other sexually transmitted diseases |
| Crohn's ulceration and inflammation |
| Anal, rectal, or pelvic cancer |
| Lymphoma or leukemia |

Evaluation

The diagnosis of anal fissure is often made on the basis of the patient's medical history. Several anorectal disorders can present with severe anal pain; anal fissure is the most common cause of pain with or after defecation (Table 1). Anal examination can confirm the diagnosis at the initial visit but is often limited by the patient's discomfort. The patient is usually examined in the prone position. A gentle spreading of the buttocks can reveal the fissure in some patients. If the patient is too apprehensive and in much discomfort, the examination should be aborted. The patient is treated for the presumed diagnosis of anal fissure and a complete examination is deferred to the next visit, usually three or four weeks later. If the fissure is not visualized, li-



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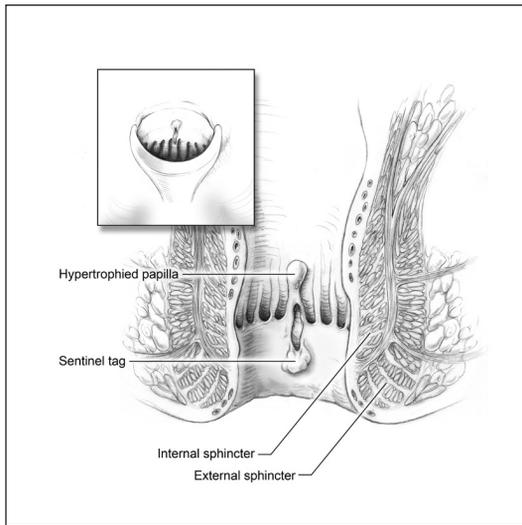


Figure 1. Anal fissure.

docaine 2% jelly is used to locally anesthetize the anal opening so that a gentle digital examination can be attempted. Anal spasm is often present. Posterior or anterior midline tenderness can be elicited with gentle palpation. If the patient tolerates the digital examination, then anoscopy can be performed. In addition to direct visualization of the fissure, the clinician may note a sentinel pile or tag just distal to the fissure and a hypertrophied anal papilla just proximal to it (Figure 1). The exposed white fibers of the internal sphincter muscle can be seen in the center of chronic fissures. The clinician should be ready to abort the examination at any time if the patient has severe pain. Under such circumstance, carrying out the examination causes needless suffering and often cannot be completed despite the perseverance of the examiner. If there are findings suspicious for other disorders, such as draining pus from anal opening, swelling and erythema of the perianal area, or a mass, then the patient should undergo an examination under anesthesia.

It is important to note that benign fissures are located in the posterior or anterior midline. Fissures located in the lateral quadrants are referred to as atypical fissures or ulcers and are often secondary to other conditions (Table 2). Atypical fissures can be multiple, deep, wide; have irregular margins; and may present with purulent drainage from

| Table 2. Atypical causes of anal fissure or ulcer |
|--|
| Syphilis |
| Tuberculosis |
| Leukemic infiltrate |
| Carcinoma |
| Herpes |
| Crohn's disease |

| Table 3. Fiber products | | |
|--------------------------------|------------|----------------|
| Type of fiber | Trade name | Fiber content |
| Psyllium | Metamucil | 3.4 g/teaspoon |
| | | 0.5 g/capsule |
| | Konsyl | 6 g/teaspoon |
| | | 0.5 g/capsule |
| Methylcellulose | Citrucel | 2 g/teaspoon |
| | | 0.5 g/caplet |
| Calcium polycarbophil | FiberCon | 0.5 g/caplet |
| Guar gum | Benefiber | 3 g/tablespoon |
| | | 1 g/tablet |
| | | 0.5 g/caplet |

the anus. Atypical fissures warrant a complete medical workup and often require an examination under anesthesia, with biopsies and cultures.

Treatment Options

More than 90% of fissures heal spontaneously. Symptomatic fissures warrant treatment. Conservative management is the first line of therapy. Increasing dietary fiber and water intake should be coupled with fiber supplementation. Psyllium-based products are our preferred fiber supplement. For patients who cannot tolerate psyllium because of excess gas or bloating, other fiber products are available (Table 3). Ideally the adult diet should contain 25 to 35 g of fiber daily (Table 4).

| Table 4. Fiber-rich foods | | |
|---|---------------|-------------------|
| Food | Serving size | Fiber content (g) |
| Fruits | | |
| Raspberries | 1 cup | 8.3 |
| Pear | 1 medium | 5 |
| Figs, dried | 2 medium | 3.7 |
| Apple | 1 medium | 3.3 |
| Strawberries | 1 cup | 3.3 |
| Orange | 1 medium | 3 |
| Legumes, beans, grains, and nuts | | |
| Lentils | 1 cup, cooked | 15.6 |
| Black beans | 1 cup, cooked | 15 |
| Spaghetti, whole wheat | 1 cup | 6.3 |
| Bran flakes | 1 cup | 6 |
| Bread, whole grain | 1 slice | 2-5 |
| Oatmeal | 1 cup | 4 |
| Almonds | 24 nuts | 3.3 |
| Vegetables | | |
| Broccoli | 1 cup, cooked | 10.9 |
| Peas | 1 cup | 8.8 |
| Yam | 1 cup, cooked | 5.3 |
| Spinach | 1 cup, cooked | 4.3 |
| Corn | 1 cup | 4 |

In addition to increasing dietary fiber, patients should begin fiber supplementation once a day (ie, 6 g psyllium), and if that is tolerated, their dosage should be increased to twice a day within a week. Patients should drink at least two glasses of water or fluids each time they take a fiber supplement dose. A laxative, such as two tablespoons milk of magnesia once or twice a day, is added for patients with persistent constipation despite increased fiber intake. Stool softeners such as docusate can also be added to the fiber regimen. A sitz bath in warm water once or twice a day for ten minutes may offer some relief. Lidocaine 2% jelly is prescribed to reduce pain as needed before and after bowel movements. Steroid-based creams and hemorrhoidal ointments are usually not effective. Ointments such as nitroglycerin 0.2% to 0.3%, diltiazem 2%, and nifedipine 0.03% can heal symptomatic fissures; their reported success rate is between 30% and 70%.^{2-4,7-11} Most of these medications must be compounded as an ointment preparation by a pharmacy. Gel or liquid preparations are not as effective because of a shorter duration of action. Furthermore, they are cumbersome to use and do not adhere to the anal area as well as ointments do. Diltiazem 2%, applied three times daily and five minutes prior to a bowel movement, is our ointment of choice and has a higher rate of fissure healing than nitroglycerin does and can heal fissures that have been unsuccessfully treated with nitroglycerin.¹⁰ Headache is a common side effect with nitroglycerin, experienced by up to 50% of patients.⁸ About 10% of patients using diltiazem ointment will experience itching.¹⁰ Patients should wear a glove or a finger cot to apply the medication. The relaxation of sphincter tone induced by diltiazem, nitroglycerin, and nifedipine can relieve the pain within a few days, but complete

healing may take up to two months. Patients should be reassessed at one month; if there is persistent fissure but decreased symptoms, the ointment should be continued for another month.

Patients in whom medical therapy fails may be candidates for surgical intervention. The timing of intervention depends on the initial response to conservative therapy and on symptom severity. Patients with severe anal pain can be offered surgical intervention if no improvement is seen within a week. Injection of botulinum toxin type A into the internal sphincter can lead to symptomatic relief and healing of some fissures. Overall, it is safe and rarely causes any degree of incontinence. The paralysis that it causes occurs within hours of injection, reaches its peak within a week, and can last between one and three months.⁸ However, in many patients the relief is temporary and long-term fissure recurrence is common, often making additional injections necessary.⁸ Furthermore, botulinum is expensive; the cost of 100 units is \$558 at our institution. Because of these reasons, we do not offer injection as a sole treatment. However, for a subgroup of patients with fissures refractory to medical therapy who are at risk of incontinence or are reluctant to undergo the gold standard surgical treatment of lateral internal sphincterotomy (LIS), we have combined injection of botulinum with fissurectomy. Debridement of the fibrotic edges of a chronic fissure can stimulate healing when combined with fissurectomy.¹¹ Typically we inject 60 to 80 units of botulinum toxin type A into the internal sphincter muscle; we have seen complete fissure resolution in many patients.

The most effective surgical treatment of chronic anal fissure is LIS (Figure 2). LIS can heal more than 90% of fissures refractory to medical therapy within eight

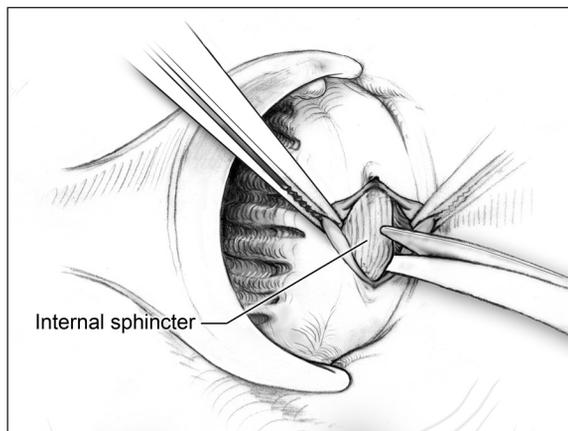


Figure 2a. Lateral internal sphincterotomy.

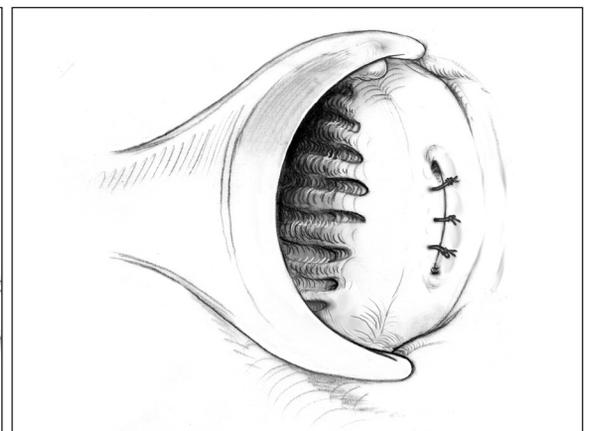


Figure 2b. Lateral internal sphincterotomy.

weeks and is associated with a very low recurrence rate of less than 10%.⁷ LIS involves cutting a small portion of the distal aspect of the internal sphincter muscle (Figure 2). The internal sphincter muscle contributes to baseline and resting continence. Spasm of this muscle results in severe anal pain and constricts blood flow to the fissure area. Releasing a portion of the muscle yields rapid symptomatic relief and heals the fissure. Overall, the procedure is safe and can be done under local anesthesia with intravenous sedation in most patients. The complication rate is low.^{7,12-14} A subgroup of patients may experience transient and temporary gas incontinence. In rare cases, the incontinence can be more severe or permanent. A careful evaluation of the patient's baseline continence level is important before deciding on surgery. If the patient has any pre-existing degree of incontinence, it is best to consider injection of botulinum toxin type A with fissurectomy or, alternatively, a flap procedure to cover the fissure.

Conclusion

Anal fissure is the most common cause of severe anal pain and bleeding seen in the primary care setting, in urgent care and surgical clinics, and in Emergency Departments. Most fissures heal spontaneously, but conservative management with ointment and fiber supplementation will relieve the pain and promote healing of those that do not. Surgical intervention is reserved for patients in whom conservative treatment fails. ❖

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Suggested Reading

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Releasing a portion of the muscle yields rapid symptomatic relief and heals the fissure.