Anal Fissures causes, Signs and Symptoms, diagnosis and treatment

Anal fissures are defined as a superficial linear tear in the squamous epithelium of the anal canal distal to the dentate line.
They are most commonly caused by the passage of a large, hard stool.

In the short-term, it usually involves only the epithelium and, in the long-term, involves the full thickness of the anal mucosa.

Occurrence

Anal fissures are common in infancy, and they represent the most common cause of bright rectal bleeding at any age. If not promptly diagnosed and treated, these small tears and their occasionally associated superficial infection cause severe anorectal pain during bowel movements and set in motion a cycle of stool negativism, constipation, and increasing pain with subsequent defecation.

Causes

EThe exact cause is not exactly known but it can occur due to:

1.Trauma due to passage of hard stool(constipation) or rectal examination speculum,

2. Low-fiber diets like raw fruits and vegetables

3. Prior anal surgery. Scarring from the surgery may cause either stenosis or tethering of the anal canal

4.Chronic diarrhea.

5.Habitual use of cathartics.

6.Abnormalities in internal sphincter tone such as hypertonicity and hypertrophy of the internal anal sphincter, leading to the elevated anal canal and sphincter resting pressures.

Most patients with anal fissures have elevated resting pressure, and this resting pressure returns to normal levels after surgical sphincterotomy.

Pain accompanies each bowel movement as this raw area is stretched and the injured mucosa is abraded by the stool.

The internal sphincter also begins to spasm when a bowel movement is passed, which has 2 effects. First, the spasm itself is painful; second, the spasm further reduces the blood flow to the posterior midline and the anal fissure, contributing to the poor healing rate.

Pathophysiology Of anal fissures

Constipation thought to cause initial trauma causing acute fissures. Acute anal fissures are superficial and are not normally associated with skin tag formation.

A chronic anal fissure is associated with the development of both anal tags and polyps (hypertrophied anal papillae) as a result of inflammatory edema. Chronic sub epithelial infection at the fissure results in fibrosis and, in rare instances, anal stenosis.

The torn edges of the anal epithelium become undermined and the ulcer deepens, exposing fibers of the internal sphincter muscle. A vicious cycle then ensues in which subepithelial inflammation causes spasm of the internal sphincter, inhibiting free drainage of the infected fissure and permitting continued inflammation, resulting in a small, chronic, inadequately drained abscess.

The reflex relaxation of the internal sphincter that normally follows defecation is lost in patients with anal fissure; instead, contraction of the internal sphincter occurs.

Diagnosis

As usual, a comprehensive patient history is key because a relatively specific diagnosis is usually reached on history alone.

The patient will complain of;

1 Severe pain during a bowel movement, with the pain lasting minutes - hours afterward. The pain leading to a cycle of worsening constipation, harder stools, and more anal pain.

2 Bright red blood on the toilet paper or stool but no significant bleeding.

3 Mucous anal discharge and pruritus ani are also common.

History of a chronic anal fissure is typically cyclical; periods of acute pain are followed by temporary healing, only to be succeeded by further acute pain.

Physical examination

The patient should be examined in the left lateral position. A visual examination may disclose a posterior oedematous tag and, on parting the buttocks, an associated fissure may be seen.

Note depth of fissure and its orientation to the midline often described using clock orientation of hour hand.

The majority of tears are found in the posterior midline. Fissures occurring off the midline should raise the possibility of other etiologies.

Sigmoidoscopy should be undertaken, under anesthesia to exclude specific causes of the fissure, irritable bowel syndrome especially Crohn's disease, anal syphilis, anal herpes, anal carcinoma, lymphoma, anoreceptive intercourse (with or without HIV infection), and, in children, sexual abuse.

Rectal examination is generally difficult to tolerate because of sphincter spasm and pain.

Acute fissures are erythematous and bleed easily.

With chronic fissures, **classic fissure triad** may be seen.

a. Deep ulcer
b. Sentinel pile-skin tag
c. Enlarged anal papillae

Treatment of anal fissure

The goals of treatment are to relieve constipation and pain thus to break the cycle of hard bowel movement, associated pain, and worsening constipation and spasm of the internal anal sphincter.

Medical therapy

Initial therapy for an anal fissure is medical in nature, and more than 80% of acute anal fissures resolve without further therapy.

Softer bowel movements are easier and less painful for the patient to pass.

First-line medical therapy

1. Diet modification with increased water intake, fibers, fruits, and vegetables.

2.Stool-bulking agents/Stool softeners -such as fiber supplementation and stool softeners-polyethylene glycol
Laxatives such as lactulose are used as needed to maintain regular bowel movements.

3. Mineral oil may be added to facilitate passage of stool without as much stretching or abrasion of the anal not used for long.

4. Sitz baths after bowel movements may offer symptomatic relief as they relieve painful internal sphincter muscle spasm

Second-line medical therapy

Topical application of 0.2% nitroglycerin (NTG) ointment directly to the internal sphincter. NTG ointment is thought to relax the internal sphincter and to help relieve some of the pain associated with sphincter spasm; it also is thought to increase blood flow to the anal mucosa.

The main adverse effects are headache and dizziness; they could be used directly before bedtime.

Others -hydrocortisone cream, lignocaine gels, Proctosedyl ointment (cinchocaine anesthetic 0.5 percent and hydrocortisone 0.5 percent).

Newer therapy for acute and chronic anal fissures is botulinum toxin. The toxin is injected directly

into the internal anal sphincter and, in effect, performs a chemical sphincterotomy.

The effect lasts approximately 3 months until the nerve endings regenerate. This 3-month period may allow acute fissures (and sometimes chronic fissures) to heal and symptoms to resolve.

Recurrence indicates a need for surgery.

Surgical therapy

Surgical therapy is usually reserved for acute anal fissures that remain symptomatic after 3-4 weeks of medical therapy and for chronic anal fissures.

Few chronic fissures heal spontaneously or from medical therapy and are an indication for surgery.

Sphincter dilatation

Controlled anal stretch or dilatation under general anesthetic is performed because one of the causative factors for anal fissure is thought to be a tight internal anal sphincter; stretching it helps correct the underlying abnormality, thus allowing the fissure to heal.

Lateral internal sphincterotomy

Lateral internal sphincterotomy is the current surgical procedure of choice which is done under general or spinal anesthesia.

The purpose of an internal sphincterotomy is to cut the hypertrophied internal sphincter, thereby releasing tension and allowing the fissure to heal.

Sphincterotomies are normally performed in the lateral quadrants as most fissures are posterior or anterior and cuts would not heal due to impaired blood supply. Only the internal sphincter is cut; the external sphincter is not cut and must not be injured.

In chronic anal fissures, excision of the fissure in conjunction with the lateral sphincterotomy may be done. an advancement flap may be performed to cover the defect in the mucosa.

Follow-up care after surgery

Stool softeners and fiber supplementation are required after the surgery

Complications from surgery

- Infection
- Bleeding
- Anal abscess
- Fistula development,
- The most feared is the development of incontinence.
- Recurrence of fissure