

ANAL FISSURE

Background

1. Definition: A tear of the lining of the anal canal, distal to the dentate line causing pain and bleeding
2. Chronic anal fissures - present more than 6 weeks; fibrosis at the base

Pathophysiology

1. Pathology of Disease:
 - Caused by local trauma to the anal canal
 - Passing hard stool most common cause
 - Posterior midline most common location due to reduced blood flow
 - Known complication of Crohn's disease, leukemia, and tuberculosis
2. Muscle spasm pulls fissure edges apart, tears tissue, causes injury and delays healing
3. Relative posterior ischemia may also delay fissure healing¹
4. Incidence, Prevalence:
 - Difficult to establish
 - 87.5% of patients with benign anorectal diseases do not consult a physician²
 - During a 1990's German study in unselected neurological patients, prevalence was 1.6% in males and 2.2% in females³
5. Risk Factors: diet, family history of functional constipation, ischemia, pediatric sexual abuse^{4,5,6}
6. Morbidity / Mortality: minimal

Diagnostics

1. History: Bleeding, itching, "tearing" pain with passage of stool; specifically, rectal pain and bleeding⁷
2. Physical Examination:
 - Visual inspection with spread buttocks usually sufficient
 - A posterior anal tear, laceration, or abrasion easily seen. Rectal exams and anoscopy not well tolerated, and rarely necessary
3. Diagnostic Testing:
 - Laboratory evaluation: normally, none (in selected patients - CBC, herpes culture, PPD, RPR)
 - Diagnostic imaging none
 - Other studies: Sigmoidoscopy or colonoscopy should be considered for high risk patients with rectal bleeding to evaluate for colorectal cancer, ulcerative colitis, and Crohn's disease. (High risk: anemia, age >50, failure to heal, lateral fissures, history of anal intercourse, anal warts, smoking, treatment failure, or recurrence)
4. Diagnostic "Criteria": None

Differential Diagnosis

1. Key Differential Diagnoses
 - Colorectal cancer
 - Inflammatory bowel disease
 - Infectious ulcers
 - Hemorrhoids

2. Extensive Differential Diagnoses

- Syphilis
- Herpes
- Chlamydia
- Gonorrhea
- Lymphogranuloma venereum
- Streptococcus (children)
- Rectal cancer
- Radiation proctitis
- Sexual abuse
- Trauma
- Proctalgia fugax
- Hemorrhoids

Therapeutics

Goal of therapy -pain relief, reduce anal muscle spasm, and promote non-traumatic bowel movements

1. Acute Treatment:(SOR:C)^{3,8}
 - Conservative therapy has 43-87% cure rate^{3,8}
 - Fiber supplementation keeps stools formed and soft
 - Sitz baths after bowel movements relax anal sphincter
 - Anesthetic creams no more helpful than Sitz baths and fiber⁸
2. Medical Therapies (SOR:A)⁹
 - Fissures unresponsive to conservative treatment can be given trial of medical therapy
 - Marginally effective in both adults and children⁹
 - Nitroglycerin ointment 0.2-0.5% two to three times per day for 6-8 weeks
 - Nifedipine ointment 0.2% two to three per day for 6-8 weeks
 - Diltiazem ointment 2% two to three times per day for 6-8 weeks
 - Meta-analysis showed nitroglycerin ointment significantly better than placebo (48.6% vs. 37%), but recurrence about 50%⁹
 - Botulism toxin injections, diltiazem, and nifedipine equal to nitroglycerin ointment but fewer side effects⁹
 - The major side effects headache (nitroglycerin and calcium channel blockers) and flushing (nitroglycerin)
3. Surgical Therapy (SOR:A)¹⁰
 - Anal stretch not effective
 - Posterior midline sphincterotomy - lower cure rates and higher incontinence rates when compared to gold standard: partial lateral internal sphincterotomy¹¹
 - Lateral sphincterotomy – 30% rate of minor incontinence and heals 98% of fissures¹⁰
4. Further Management (24 hrs)
 - none
5. Long-Term Care
 - There is an associated risk of anal cancer in anal fissure patients¹²

Follow-Up

1. Return to Office
 - Time frame for return visit: 4-8 weeks
 - Recommendations for earlier follow-up: uncontrolled pain or bleeding
2. Refer to Specialist
 - Surgical evaluation is appropriate for failure of conservative and medical management
3. Admit to Hospital
 - Rarely required except for uncontrolled bleeding or pain

Prognosis

1. 75% heal without treatment or with Sitz baths³

Prevention

1. Recommendation (GRADE): C⁴
 - Diets with fruits, vegetables, and whole grain breads have the lowest risk of anal fissure

Patient Education

1. A fissure is an annoying small scratch or tear in the rectum that causes pain and bleeding. It is often associated with constipation or straining to pass stool. Simple measures help the anal fissure to heal. Eat a high fiber diet, drink plenty of fluids, and soak the rectal area in a warm water baths for 10-20 min three or four times per day. Use the medications as prescribed, and return for alarming pain, excessive bleeding, or if the fissure persists longer than 6-8 weeks

References

1. Schouten WR, Briel JW, Auwerda JJ, De Graaf EJ. Ischaemic nature of anal fissure. Br J Surg. 1996 Jan;83(1):63-5. PubMed PMID: 8653368.
2. Nelson RL, Abcarian H, Davis FG, Persky V. Prevalence of benign anorectal disease in a randomly selected population. Dis Colon Rectum. 1995 Apr;38(4):341-4.
3. Jost WH. Incidence of anal fissure in nonselected neurological patients. Dis Colon Rectum. 1999 Jun;42(6):828. PubMed PMID: 10378614.
4. Jensen SL. Diet and other risk factors for fissure-in-ano. Prospective case control study. Dis Colon Rectum. 1988 Oct;31(10):770-3. PubMed PMID: 3168663.
5. Chan AO, Lam KF, Hui WM, Leung G, Wong NY, Lam SK, Wong BC. Influence of positive family history on clinical characteristics of functional constipation. Clin Gastroenterol Hepatol. 2007 Feb;5(2):197-200. Epub 2007 Jan 9. PubMed PMID:17218163.
6. Nzimbala MJ, Bruyninx L, Pans A, Martin P, Herman F. Chronic anal fissure: common aetiopathogenesis, with special attention to sexual abuse. Acta Chir Belg. 2009 Nov-Dec;109(6):720-6. PubMed PMID: 20184055.
7. Kuehn HG, Gebbensleben O, Hilger Y, Rohde H. Relationship between anal symptoms and anal findings. Int J Med Sci. 2009;6(2):77-84. Epub 2009 Mar 6. PubMed PMID: 19277253; PubMed Central PMCID: PMC2653786.
8. Jensen SL. Treatment of first episodes of acute anal fissure: prospective randomised study of lignocaine ointment versus hydrocortisone ointment or warm sitz baths plus bran. Br Med J (clinical Res Ed). 1986 May 3;292(6529):1167-9

9. Nelson R. Non surgical therapy for anal fissure. Cochrane Database Syst Rev. 2006 Oct 18;(4):CD003431. Review. PubMed PMID: 17054170.
10. Nelson RL. Operative procedures for fissure in ano. Cochrane Database Syst Rev. 2010 Jan 20;(1):CD002199. Review. PubMed PMID: 20091532.
11. Jonas M, Scholefield JH. Anal Fissure. Gastroenterol Clin North Am. 2001 Mar;30(1):167-81. Review. PubMed PMID: 11394029.
12. Nordenvall C, Nyren O, Ye W Elevated anal squamous cell carcinoma risk associated with benign inflammatory anal lesions. Gut. 2006 May;55(5):703-7. Epub 2005 Nov 18

Authors: **Nathan Carlson, MD, & Robert Theal, MD** *Kaiser Permanete Medical Center FPRP Riverside, CA*

Editor: **Robert Marshall, MD, MPH, Capt MC USN** *Puget Sound Family Medicine Residence, Naval Hospital, Bremerton, WA*