

ANAL FISSURE - 2

Introduction

- Anal fissure - a tear in the lining of the anal canal distal to the dentate line, usually in posterior midline
- Young to middle-age group

Pathogenesis

- Risk factors:
 - Childbirth, alteration in bowel habits, previous disease/surgery
- Primary type
 - Direct result of trauma to the anal canal (i.e. passage of hard stools)
- Secondary type
 - Related to Crohn's disease, tuberculosis, leukemia, syphilis, or AIDS
 - Often multiple or in the lateral aspect of the canal
 - Treat primary disease state
- Tear → vicious cycle exacerbated by spasm of anorectal musculature
 - Anal hypertonia (internal sphincter resting pressure 120 vs 83 mm Hg)
 - Highest at distal anterior surface
 - Paucity of blood vessels in posterior anal canal (blood flow less than half of other quadrants)
 - Elliptical arrangement of sphincter fibers

Presentation

- Painful defecation and rectal bleeding
- Acute fissures
 - Fresh laceration, bleeds easily
- Chronic fissures
 - Raised edges, exposed fibers, sentinel skin tag (47.3%), hypertrophied anal papilla (8.4%)

Treatment

- Majority of acute fissures heal spontaneously
 - Sitz baths and bran/bulking agents (topical anesthetics not more effective)
- 30% progress to chronic fissure
- Medical local therapies
 - Topical nitrates
 - Reduce internal sphincter pressure and vasodilates
 - Most common side effect headaches.
 - Nitrates + Viagra → hypotension
 - Healing rates 46-68%.
 - Recurrence 19-63%.

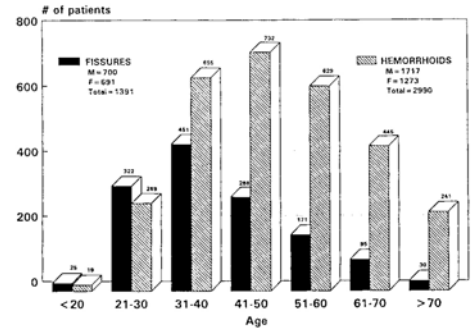
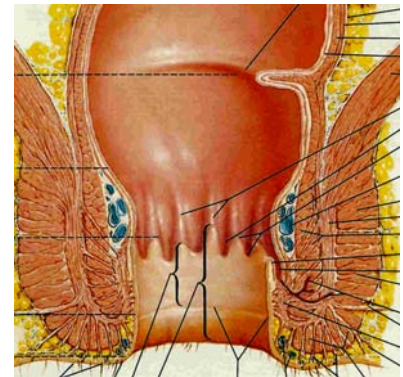
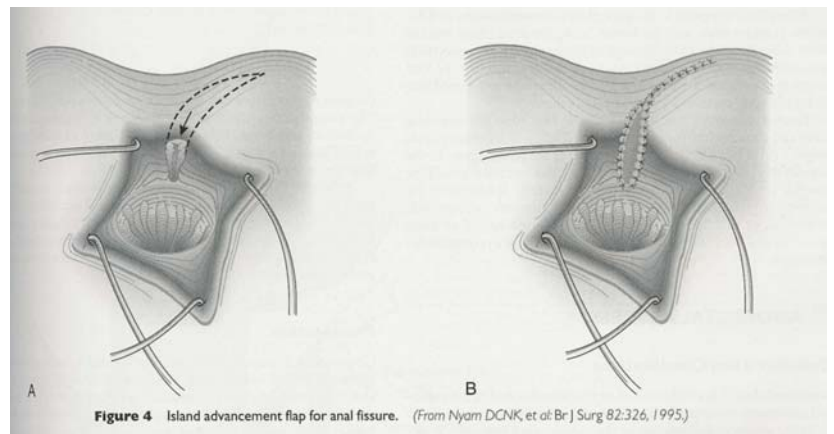
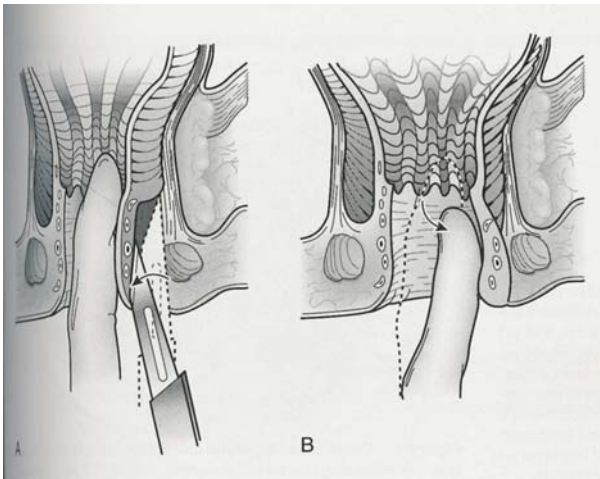


Figure 1. Distribution of anal fissures and hemorrhoids by age.



- No commercial FDA-approved preparation (0.2% concentration can be custom-made)
 - Lund et al. A randomized, prospective, double-blind, placebo-controlled trial of glyceryl trinitrate ointment in treatment of anal fissure. *Lancet*, 1997.
 - 80 patients, 68% versus 8% placebo healing rate, anal pressure 115 to 80mm Hg
 - Altomare. Glyceryl Trinitrate for Chronic Anal Fissure -- Healing or Headache?: Results of a Multicenter, Randomized, Placebo-Controlled, Double-Blind Trial. *Dis Colon Rectum*, 2000.
 - 132 patients, 49.2 vs 51.7% placebo healing rate, 33.8% headaches, 5.9% orthostatic hypotension
 - Botulinum toxin
 - Binds presynaptic cholinergic nerve terminals causing muscle paralysis
 - Cure rate approximately 80% (Mana. *NEJM*, 1998), repeat therapy for failure with 70% cure rate (Jost. *Dig Dis Sci*, 1999)
 - Recurrence up to 42%. No systemic side effects. About 5% transitory incontinence.
 - 96% vs 60% 2 month cure rate in randomized comparison to topical nitrate (Brisinda. *NEJM*, 1999)
 - Topical nifedipine
 - Calcium channel blocker - smooth muscle relaxation and vasodilation
 - Randomized double-blind trial with 52 patients (*Ezri et al. Dis Colon Rectum*, 2003)
 - 89% vs 58% healing rate compared to topical nitrates, 42 vs. 31% recurrence, 5% vs 40% side effects
 - Others: oral nifedipine, oral diltiazem, topical diltiazem, topical betanecol
- Surgical therapy
 - Reserved for patients with chronic fissures that do not heal despite medical therapy
 - Goal to relax the internal sphincter
 - Lateral internal sphincterotomy
 - 90-97% healing rate
 - Division from distal most end for a distance equal to fissure or up to dentate line
 - Main concern - fecal incontinence (about 10%)
 - Minor (escape of flatus, partial soiling) vs major (involuntary excretion of feces)
 - Open versus closed lateral sphincterotomy
 - Arroyo. *J Am Coll Surg*, 2004
 - 80 patients, randomized trial, under local anesthesia
 - 92.5% vs 90% overall healing @ 2 yr ($p>0.05$), 5 vs. 2.5% incontinence ($p>0.05$)
 - Nyam. *Dis Colon Rectum*, 1999
 - 585 patient survey, mean 70 month follow-up

- Incontinence rate 45% in early post-operative period, gross incontinence 23%,
- At follow-up (mean >5 years): 6% incontinent to flatus, 8% minor fecal soiling, 1% loss of solid stool, 3% with effect on quality of life
- Dilation
 - Lord's four finger dilatation, pneumatic balloon dilation
 - High incidence of sphincter tears and fecal incontinence
- Anal advancement flaps
 - For patients with low sphincter pressures or prior sphincterotomy



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