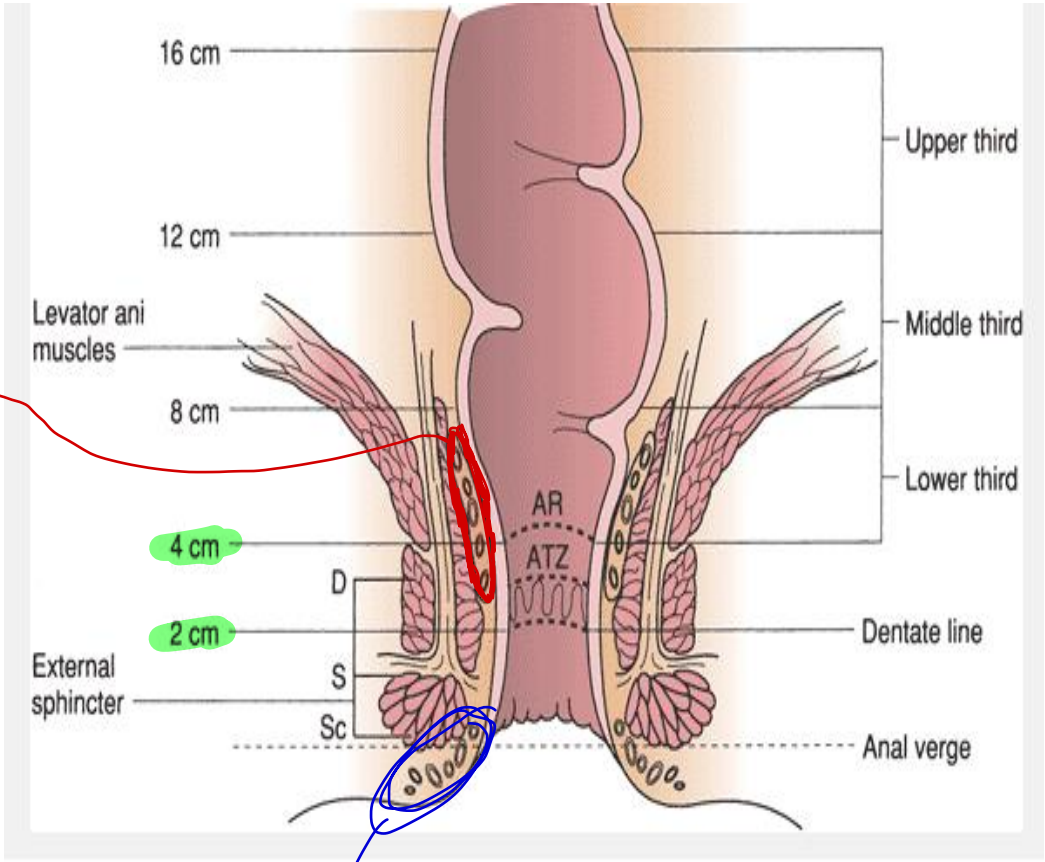
HEMORRHOIDS

Anatomy of the anal canal

Anal canal surgically extended from **anal verg** to **anal ring (AR)** .

Lower part of anal canal (from dentate line to anal verg) **covered** by **endoderm** and this called **<u>anatomical anal canal</u>**

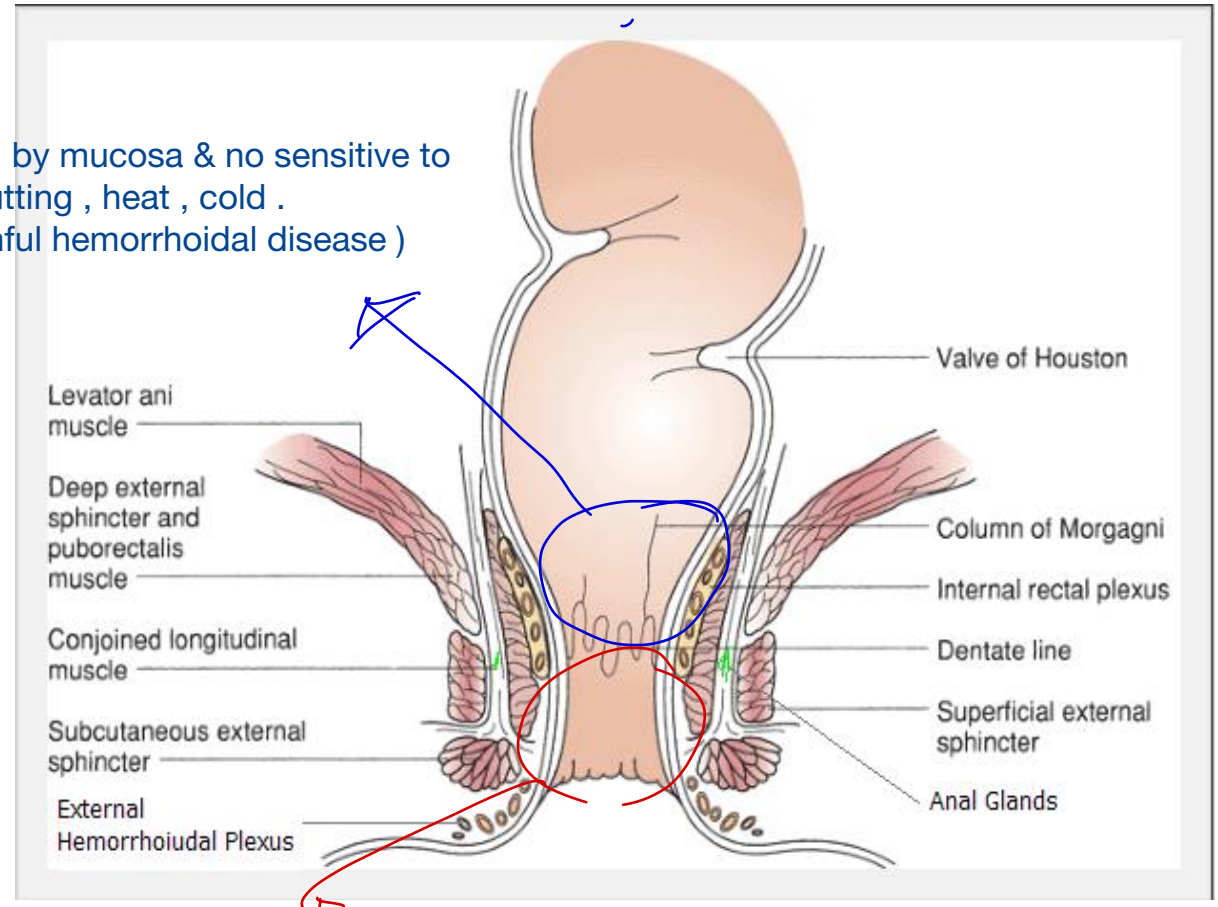
<u>In</u> red circle is the **internal hemorrhoid plexus** which included in hemorrhoid diseases , it extend from **dentate line** to **anorectal junction** and covered by **columnar type of colonic mucosa .**



External hemorrhoid plexus normally present underneath the endoderm & peri anal skin .

Anatomy

Covered by mucosa & no sensitive to pain , cutting , heat , cold .
(no painful hemorrhoidal disease)



Covered by specialized pseudo skin devoid appendages .
Somatic supplied ——-> very sensitive ——-> painfule hemorrhoidal disease

Anatomy

- Hemorrhoids are not varicose veins.
- everyone has anal cushions. The anal cushions are composed of blood vessels (erectile tissue), smooth muscle (Treitz's muscle), and elastic connective tissue in the submucosa
- They are located in the upper anal canal, from the dentate line to the anorectal ring

Anatomy

- Three cushions lie in the following constant sites:
- left lateral (3), right anterolateral (11), and right posterolateral (7).
- Smaller discrete secondary cushions may be present between the main cushions.
- The configuration is remarkably constant and apparently bears no relationship to the terminal branching of the superior rectal artery

(3, 11, 7) : 0'clock in The lateral position

Anatomy

- Hemorrhoids are not varicose veins.
- They contain highly oxygenated blood under low pressure.
- Differentiate from rectal varices which occur with portal hypertension as the rectum is an area of portosystemic shunting.

PREVALENCE

- prevalence rate of 4.4%. During life time may be (10 x) more common.
- peak between age 45 and 65 years
- Hemorrhoidectomies are performed 1.3 times more commonly in males than in females

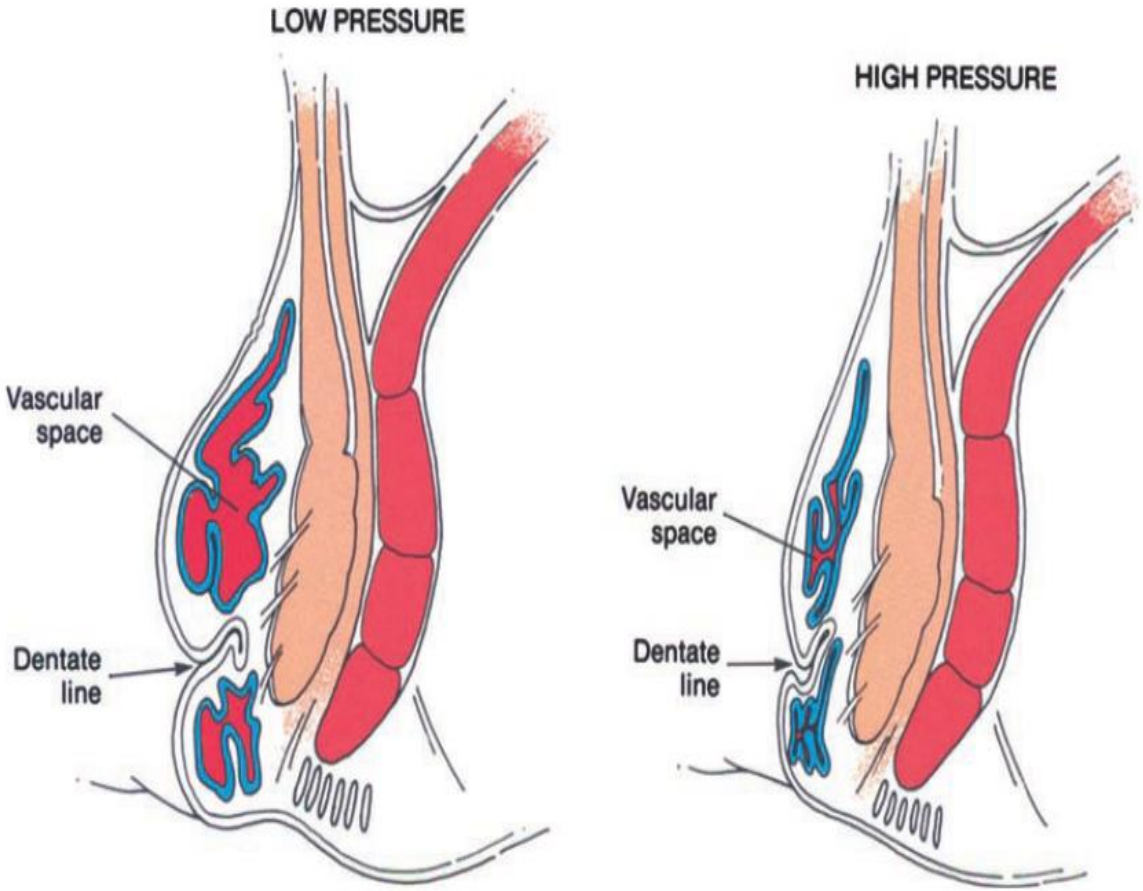
ETIOLOGY AND PATHOGENESIS

- hemorrhoids are no more common in patients with portal hypertension than in the population at large
- Thomson concluded that a sliding downward of the anal cushions is the correct etiologic theory (shearing)
- Hemorrhoids result from disruption of the anchoring and flattening action of the musculus submucosae ani (Treitz's muscle) and its richly intermingled elastic fibers. Hypertrophy and congestion of the vascular tissue are secondary (it's a degenerative disease)
- higher anal resting pressures in patients with hemorrhoids

ETIOLOGY AND PATHOGENESIS

- Constipation
- Prolonged straining
- Diarrhea
- Pregnancy
- Heredity
- Erect posture
- Absence of valves within the hemorrhoidal sinusoids,
- Increased intra-abdominal pressure
- Aging (deterioration of anal supporting tissues)
- Internal sphincter abnormalities

FUNCTION OF ANAL CUSHIONS



Distended state

compressed state

FUNCTION OF ANAL CUSHIONS

- compliant and conformable plug. Hemorrhoidectomy impairs continence to infused saline
- account for approximately 15%–20% of the anal resting pressure
- sensory information that enables individuals to discriminate between liquid, solid, and gas (anal sampling)

NOMENCLATURE AND CLASSIFICATION

- External skin tags are discrete folds of skin arising from the anal verge.
  - independent of any hemorrhoidal problem.
- External hemorrhoids comprise the dilated vascular plexus that is located below the dentate line and covered by squamous epithelium.

NOMENCLATURE AND CLASSIFICATION

Internal hemorrhoids are the

symptomatic, exaggerated, submucosal vascular tissue located above the dentate line and covered by transitional and columnar epithelium.

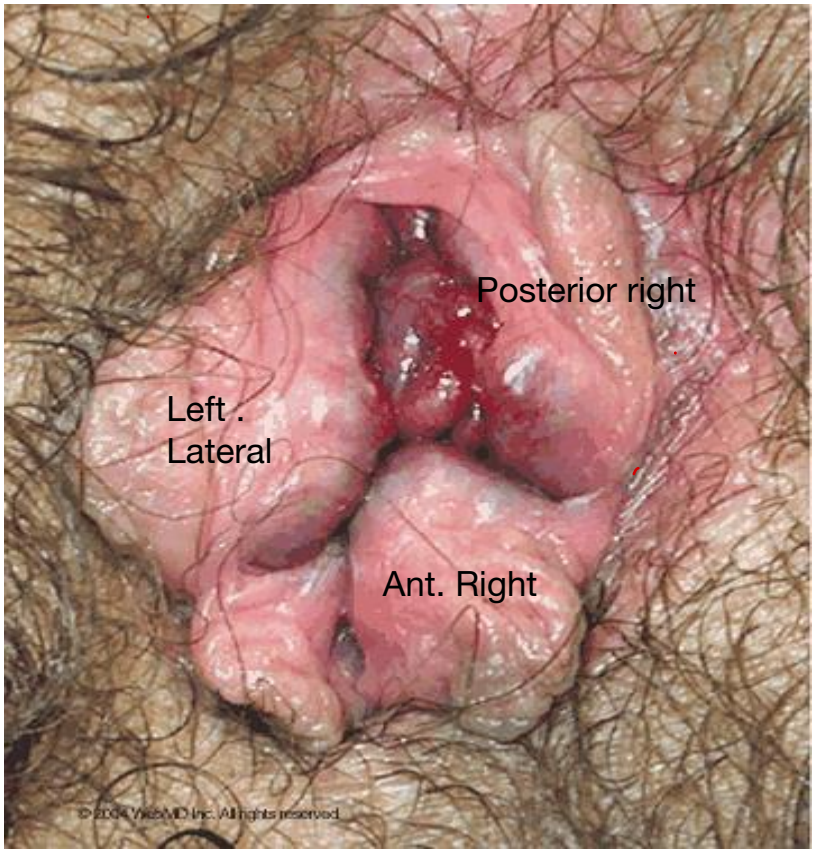
NOMENCLATURE AND CLASSIFICATION

- Grade1 internal hemorrhoids are those that bulge into the lumen of the anal canal and may produce painless bleeding.
- Grade 2 internal hemorrhoids are those that protrude at the time of a bowel movement but reduce spontaneously.
- Grade 3 internal hemorrhoids are those that protrude spontaneously or at the time of a bowel movement and require manual replacement.
- Grade 4 internal hemorrhoids are those that are permanently prolapsed and irreducible despite attempts at manual replacement. They may or may not be complicated

These grades reflects how much destination & prolapse occurred

Classic sites

Uncomplicated 4th degree hemorrhoids



DIFFERENTIAL DIAGNOSIS

- Rectal mucosal prolapse
- Hypertrophied anal papillae
- Rectal polyps
- melanoma
- carcinoma
- rectal prolapse
- Fissure

Symptoms: Bleeding (The major symptom).

- Bleeding is bright red and painless and occurs at the end of defecation.
- The patient complains of blood dripping or squirting into the toilet bowl.
- Is rarely massive.
- The bleeding also may be occult, resulting in anemia, which is rare, or guaiac-positive stools

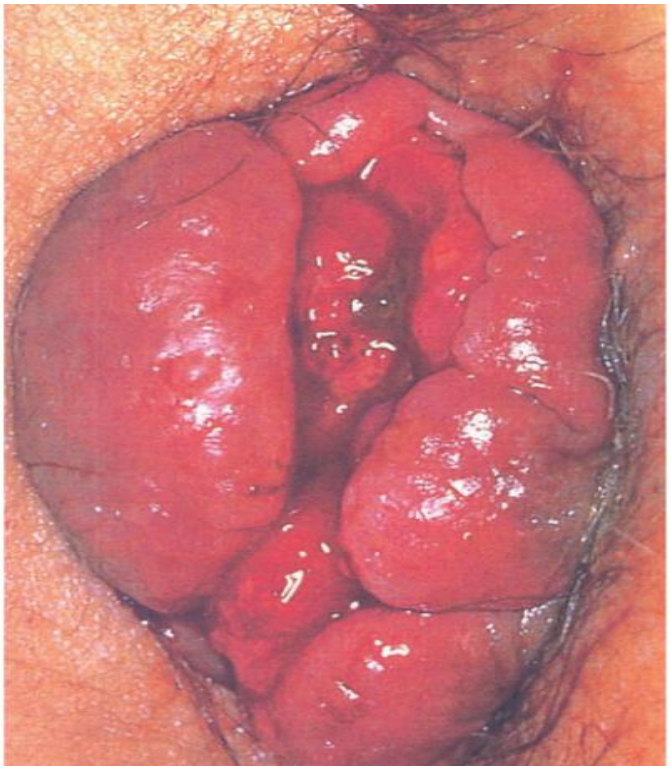
Other symptoms

- Prolapse
- Pruritus
- Pain when complicated
- Mucous and fecal leakage
- Excoriation of the perianal skin

EXAMINATION

- Inspection; Straining
- Digital examination; SOFT IMPALPABLE
- Anoscopy
- Proctoscopy or flexible sigmoidoscopy
- Colonoscopy

Complicated Grade 4 hemorrhoids



Complicated , there thrombosis,sever edema , and probably starting to become necrotic .

Treatment in general

- Medical; 1st and 2nd degree
- Minor procedures; failed medical Rx 1st and 2nd degree, some 3rd degree
- Surgery; 3rd and 4th degree

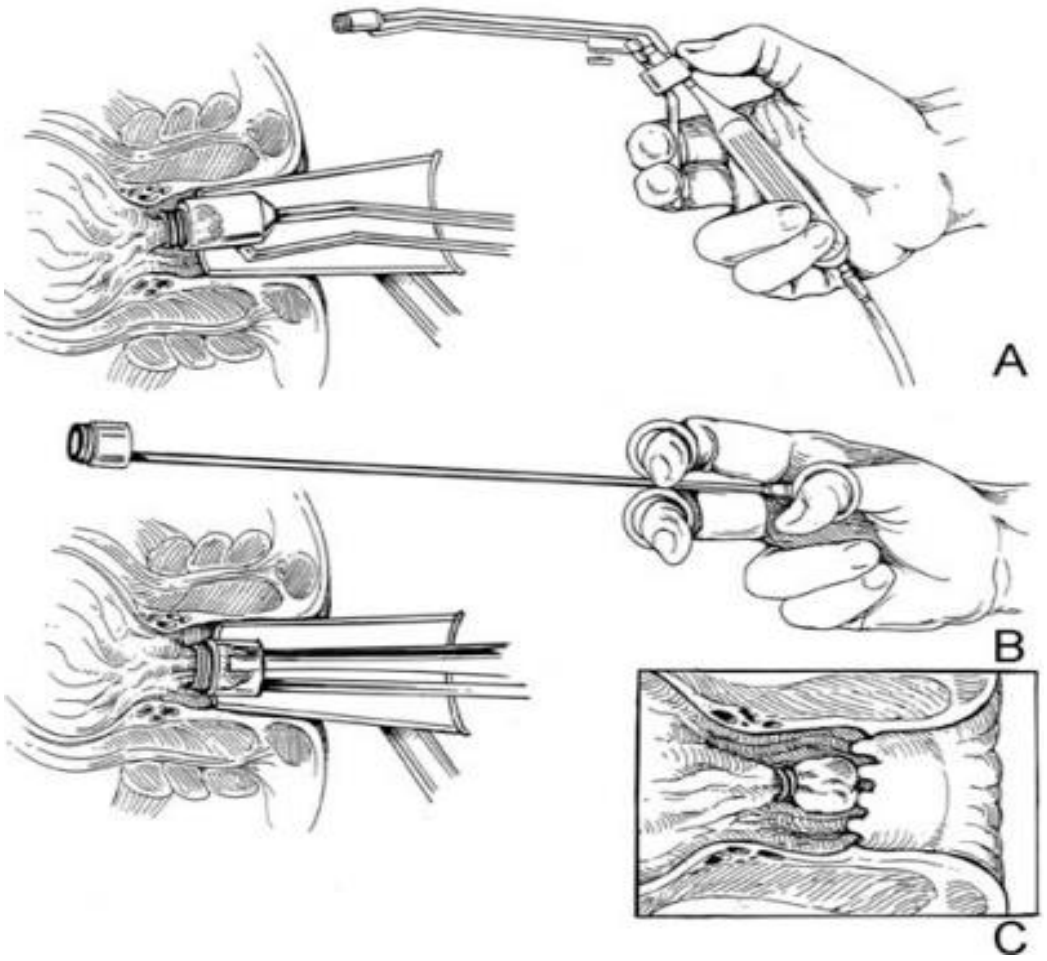
Medical

- Warm Sitz baths Lax sphincter
- Diet and bulk-forming agents Decrease constipation & prolapse
- Ointments, creams, gels, suppositories, foams, and pads
- Vasoconstrictors, Protectants, Astringents, Antiseptics, Keratolytics, Analgesics, Corticosteroids.

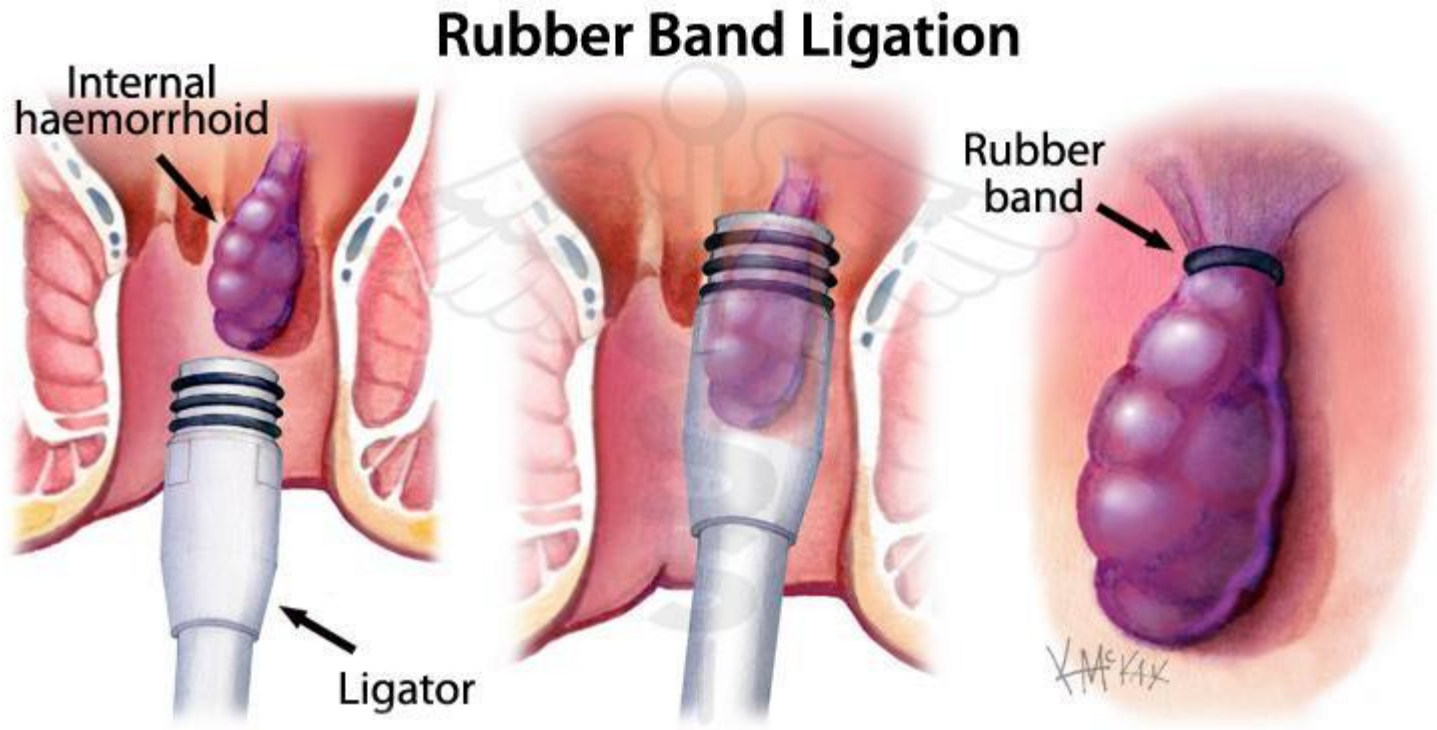
Other procedures

- Sclerotherapy
- Cryotherapy??? Freezes hemorrhoids but not usually used now
- Infrared coagulation
- Doppler guided hemorrhoidal artery ligation
- Anal Stretch; ??? obsolete

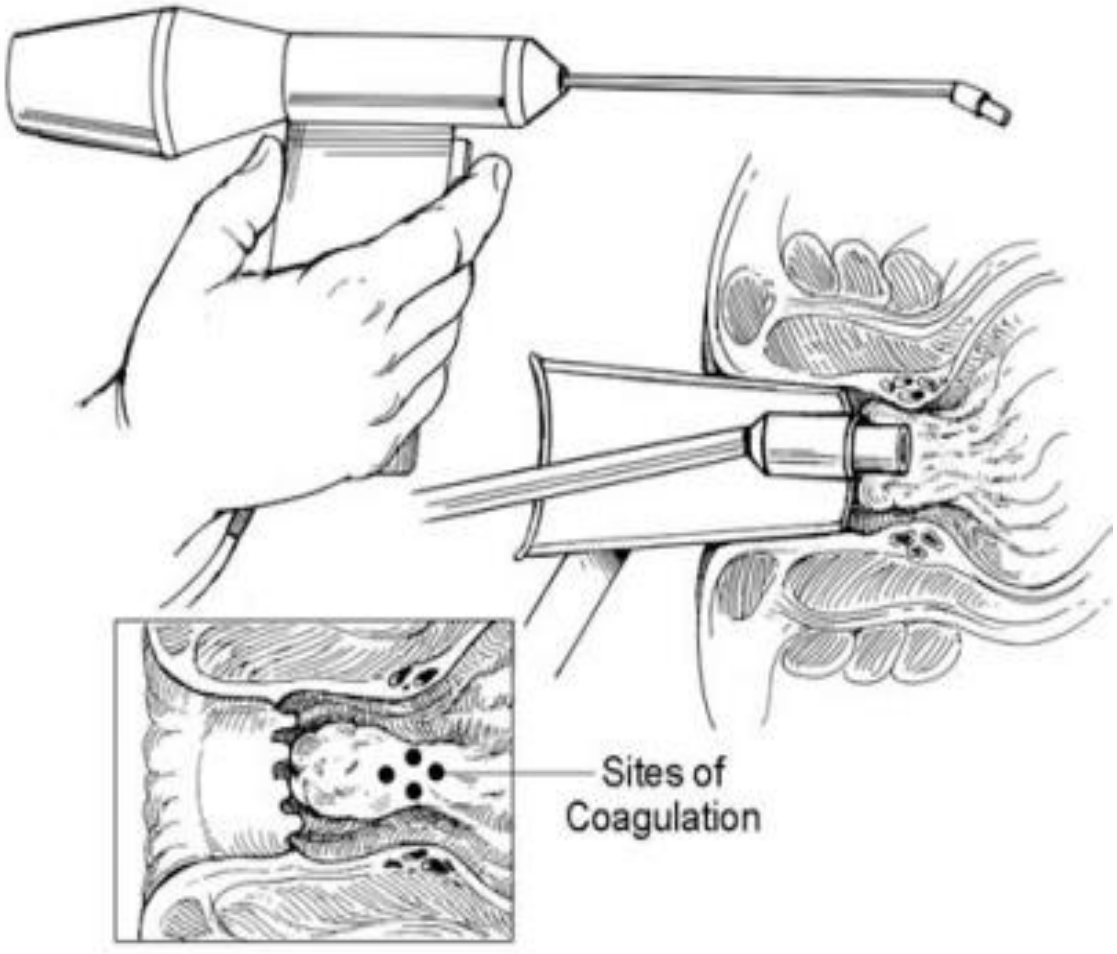
Rubber Band Ligation (Most common use)



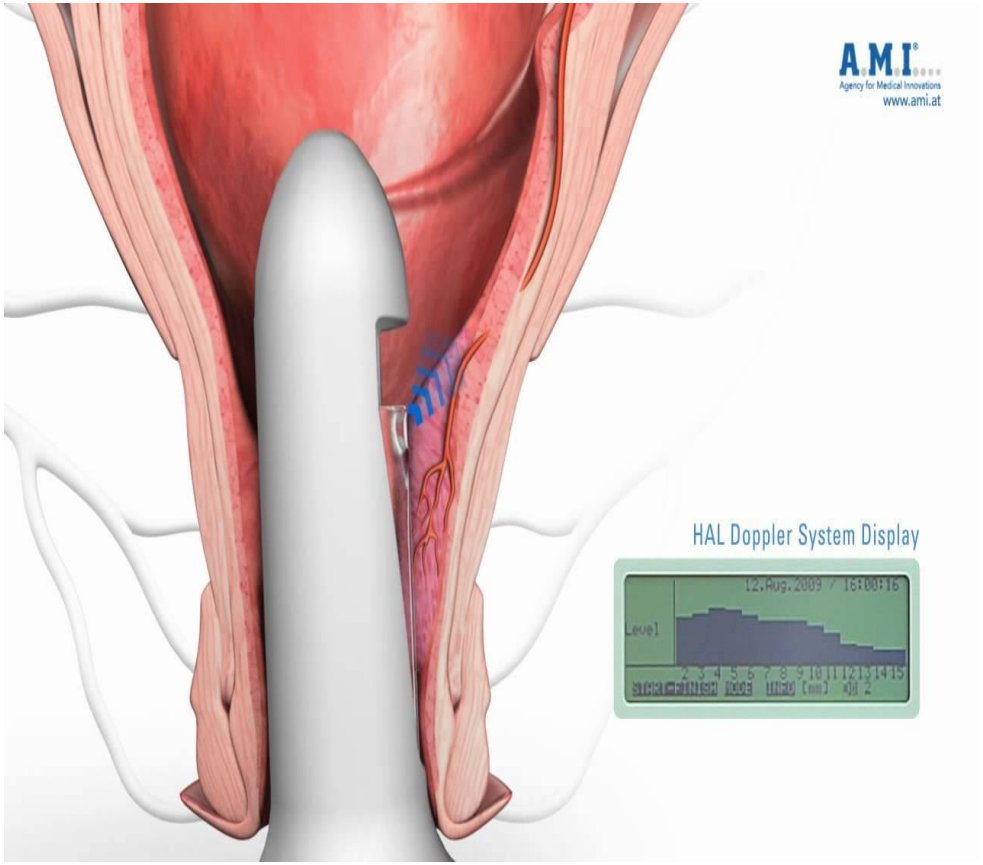
Rubber Band Ligation

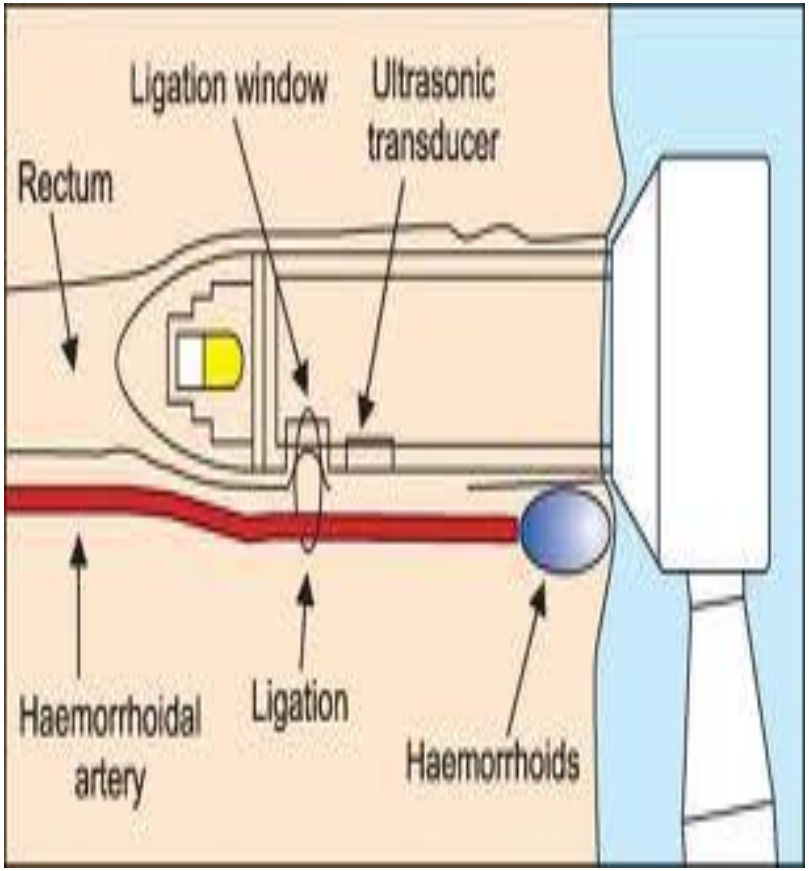


Infrared Photocoagulation



Doppler guided hemorrhoidal artery ligation

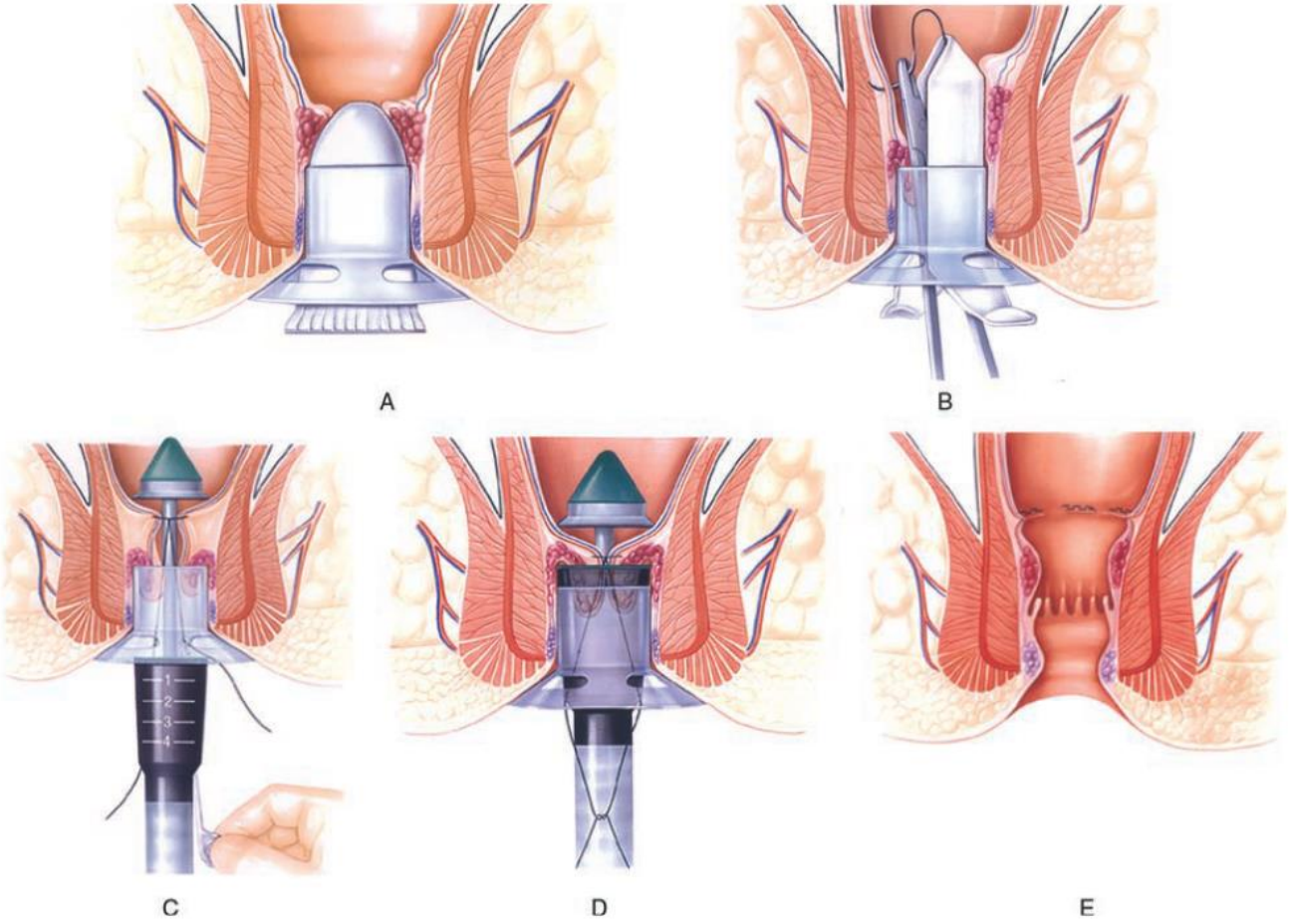




Hemorrhoidectomy

- Closed hemorrhoidectomy
- Open hemorrhoidectomy =Excision and Ligation
- Laser Hemorrhoidectomy
- Stapled hemorrhoidectomy Have higher recurrent

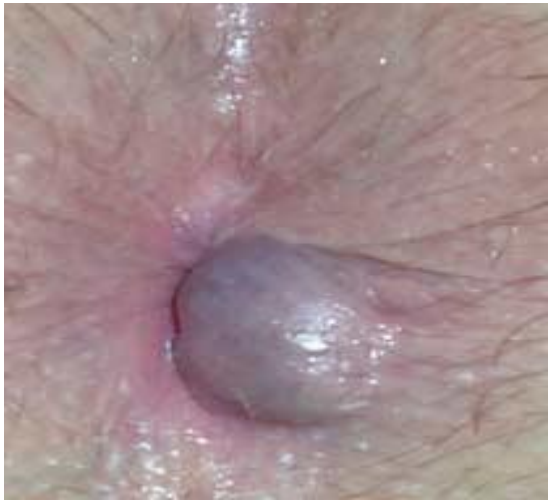
Stapled Hemorrhoidectomy



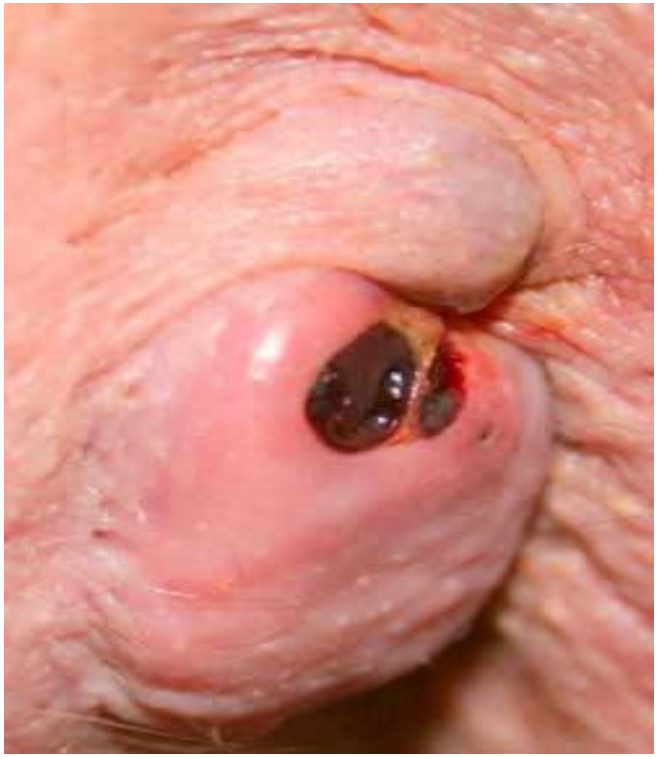
THROMBOSED EXTERNAL HEMORRHOIDS

- an abrupt onset of an anal mass and pain thatusually peaks within 48 hours and subsides in 5 days.
- The pain becomes minimal after the fourth day.
- If left alone, the thrombus will shrink and dissolve in a few weeks.
- Occasionally, the skin overlying the thrombus becomes necrotic, causing bleeding and discharge or infection, which may cause further necrosis and more pain.
- A large thrombus can result in a skin tag

THROMBOSED EXTERNAL HEMORRHOIDS



THROMBOSED EXTERNAL HEMORRHOIDS



THROMBOSED EXTERNAL HEMORRHOIDS management

- Early may be incised
- Late
  - local anesthetics
  - Warm Sitz baths

Anal Fissure

- Occur in young and middle aged adults but also may occur in infants, children, and the elderly.
- Fissures are equally common in both sexes.
- Anterior fissures are more common in women than in men
- Posterior fissures are more common than posterior in both sexes.

Anal Fissure

- Acute fissure; a tear
- Chronic fissure; sentinel pile, hypertrophied anal papilla, fibrous induration
- complications: Abscess and fistula

PREDISPOSING FACTORS

Most common

- Primary; hypertonic Internal anal sphincter (IAS)

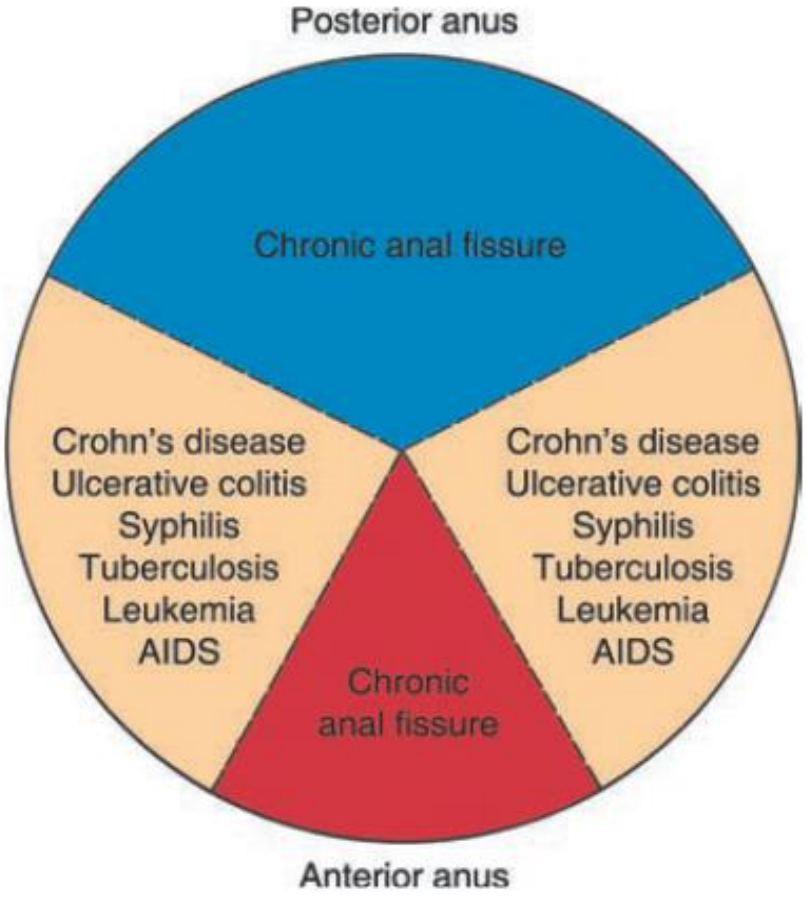
- Secondary fissures (low pressure fissure)
  - Anatomic anal abnormality (e.g. postpartum)
  - Inflammatory bowel disease
  - HIV
  - Other chronic infections
  - leukemia

symptoms

Ischemic

- PAIN in the anus during and after defecation
- Bleeding; streaks
- Constipation; cause and consequence
- large sentinel pile
- Discharge

site

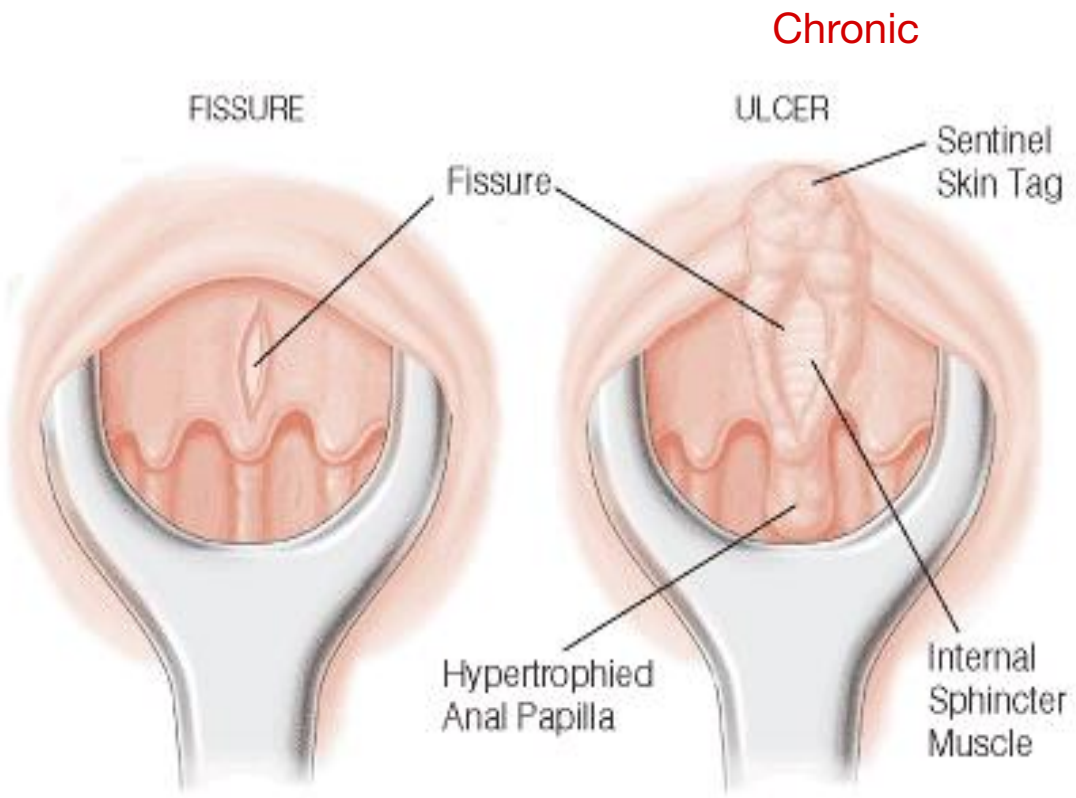

Posterior anus
Chronic anal fissure
Crohn's disease
Ulcerative colitis
Syphilis
Tuberculosis
Leukemia
AIDS
Crohn's disease
Ulcerative colitis
Syphilis
Tuberculosis
Leukemia
AIDS
Chronic
anal fissure
Anterior anus

When is it chronic

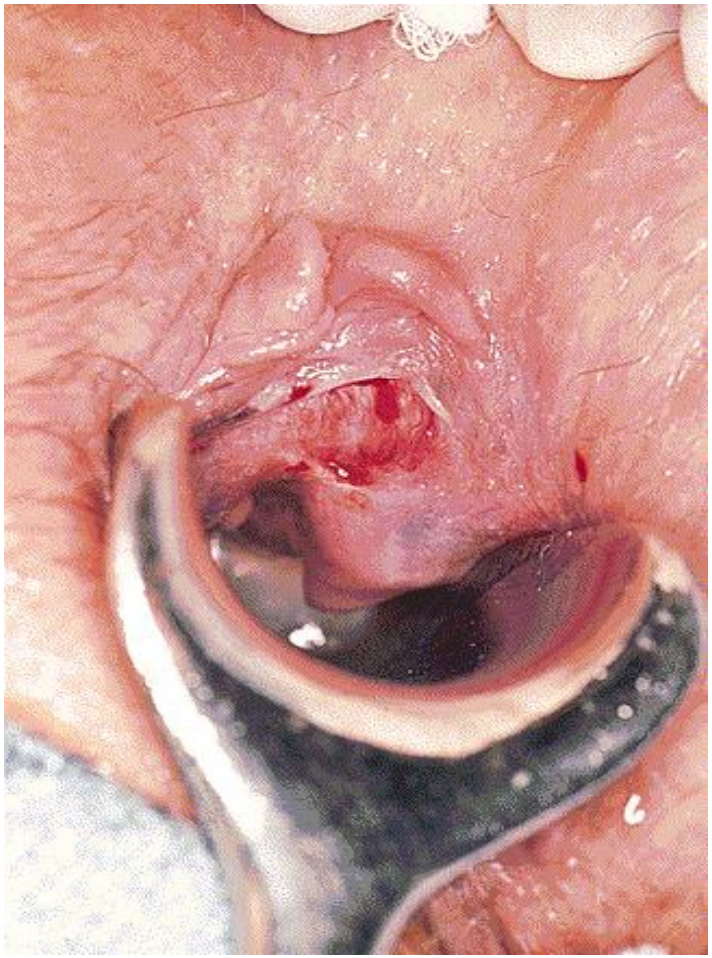
- History more than 1month
- Presence of

1. Sentinel pile
2. Hypertrophied anal papilla
3. Fibrosis
4. Submucous fistula

anal fissure
Acute vs. chronic



Chronic anal fissure



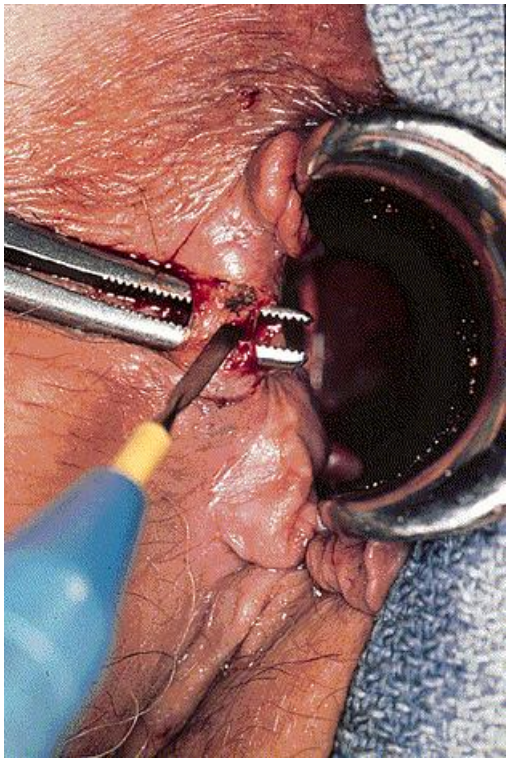
Treatment; Acute fissure

- Conservative
  - Bulk-forming agents
  - Local preparations, local anesthetics
  - Warm Sitz baths
- Pharmacologic Sphincterotomy; Glyceryl Trinitrate, Calcium Channel Antagonists, Botulinum Toxin
- Sphincterotomy

Treatment Chronic fissure

- Conservative; same as acute
- Internal sphincterotomy (lateral partial) the standard surgery
- Classic Excision
- V-Y Anoplasty (Advancement Flap Technique)
- Finger Anal Sphincter Stretch; ??? Obsolete
- Controlled intermittent anal dilatation

Partial lateral internal sphincterotomy



Treatment Chronic fissure fissurectomy and V-Y Anoplasty