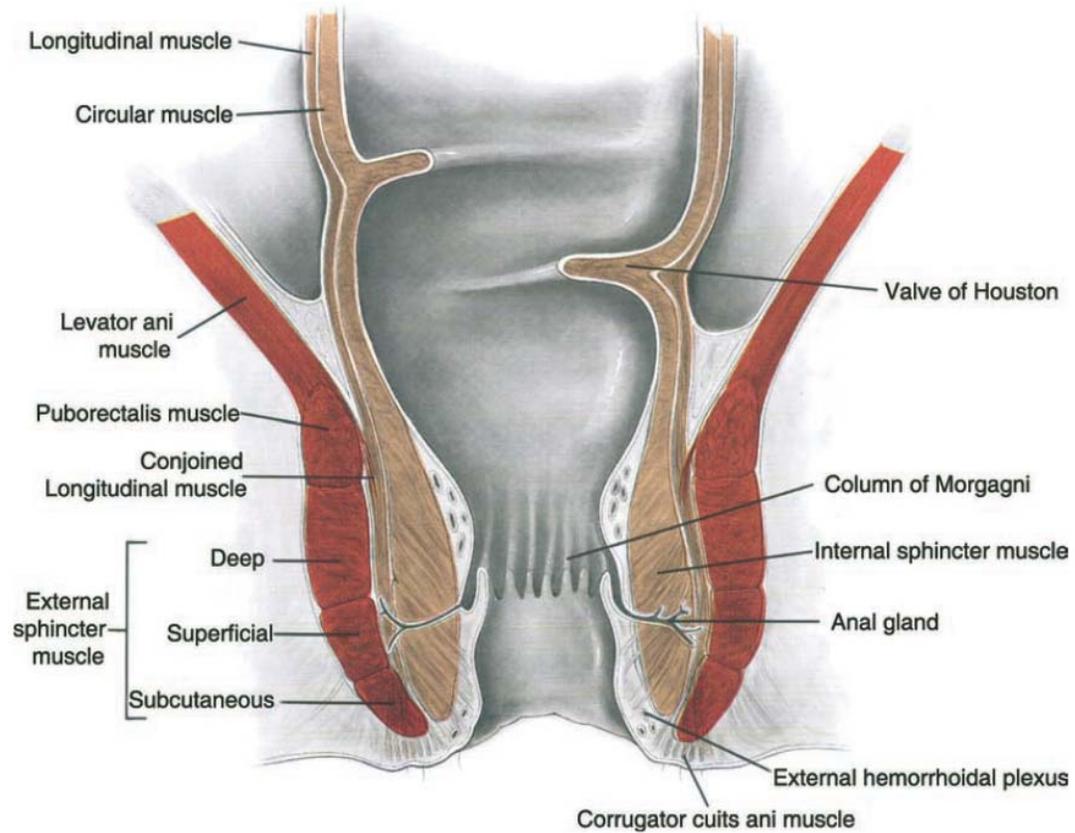


PERIANAL SUPPURATION
ANAL ABSCESS-FISTULA

Anatomy anal glands

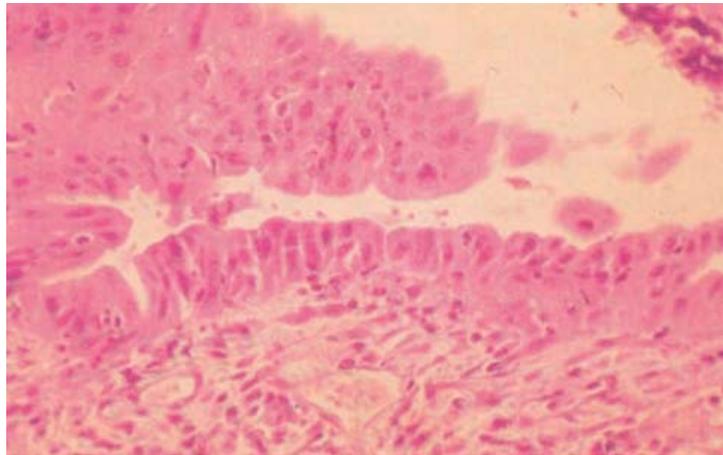


anal glands

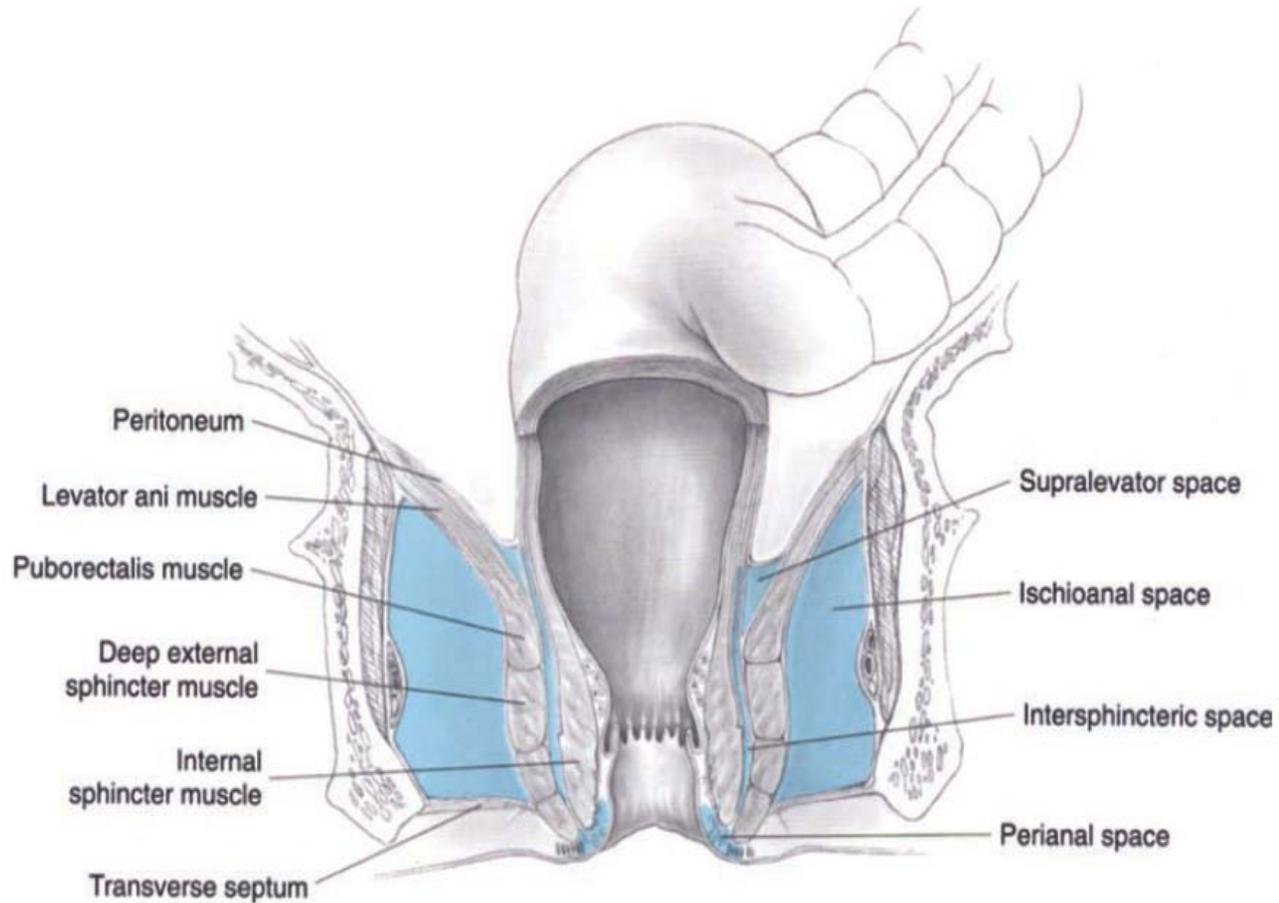


- The average number of glands in a normal anal canal is six (range, 3–10)
- Each gland is lined by stratified columnar epithelium with mucus-secreting or goblet cells interspersed within the glandular epithelial lining and has a direct opening into an anal crypt at the dentate line.
- Occasionally, two glands open into the same crypt
- Half the crypts have no communication with the glands

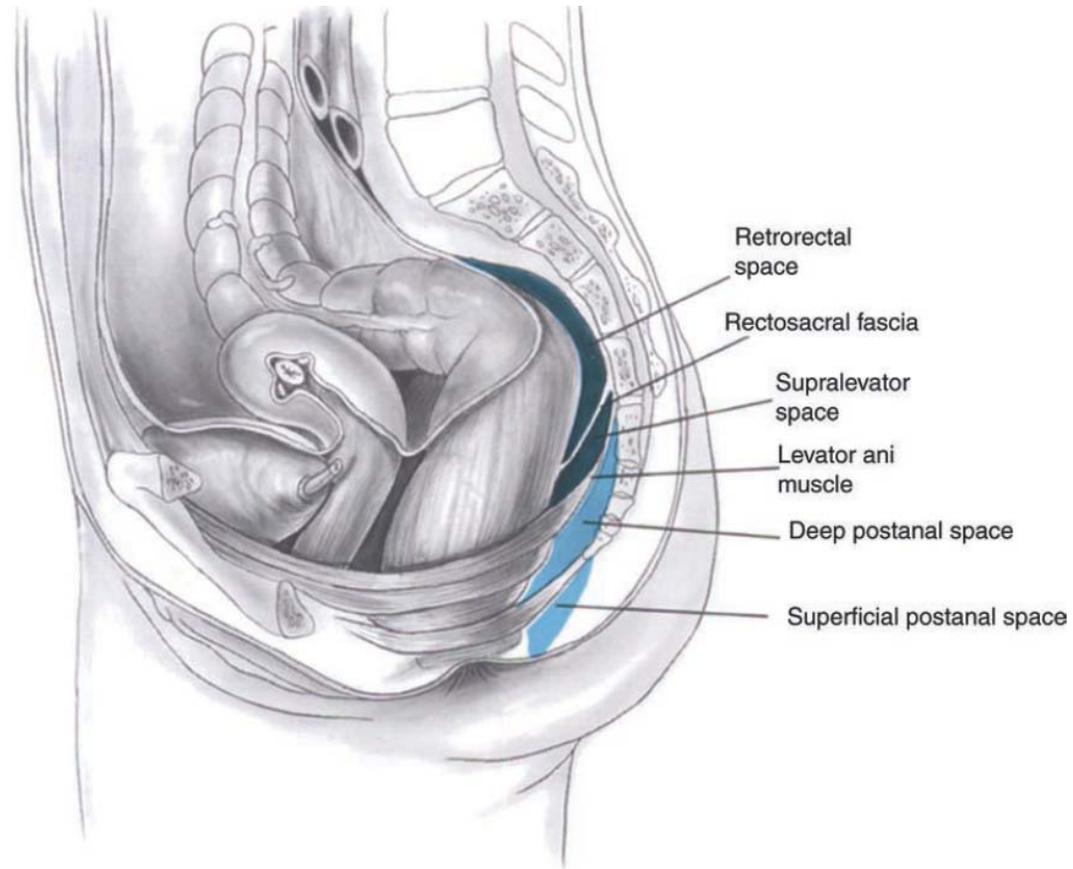
anal glands



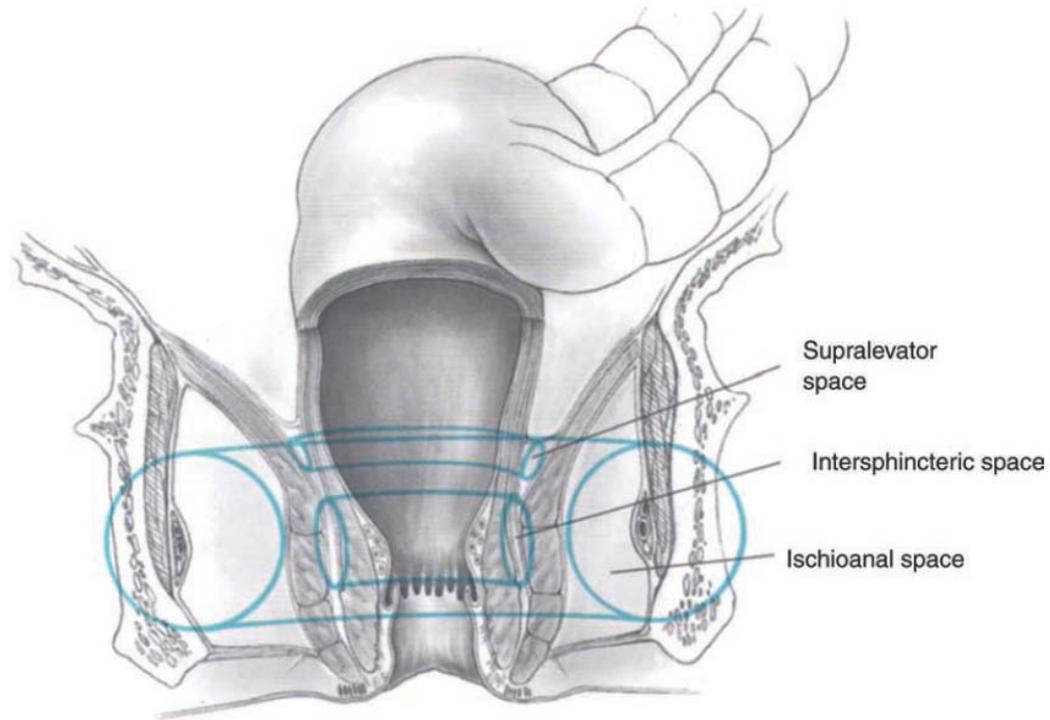
Perianal spaces



Perianal spaces



Horseshoe-shaped connections of the anorectal spaces.



Etiology



- ❑ Cryptogenic or cryptoglandular
- ❑ Specific ones include the following:
 - Crohn's disease, chronic ulcerative colitis
 - Actinomycosis, lymphogranuloma venereum tuberculosis (TB)
 - foreign body
 - carcinoma, lymphoma, leukemia
 - trauma (impalement, enemas, prostatic surgery, episiotomy, hemorrhoidectomy)
 - Radiation
 - Chronic anal fissure

Cryptoglandular disease



- The anal glands were found to arise in the middle of the anal canal at the level of the crypts and to pass into the submucosa.
- two-thirds continuing into the internal sphincter
- one-half penetrating into the intersphincteric plane

Cryptoglandular disease



Obstruction of these ducts, whether secondary to fecal material foreign bodies, or trauma, results in stasis and infection

Chronicity is due to

1. persistence of the anal gland epithelium in the tract
2. nonspecific epithelialization of the fistula tract from either the internal or external openings

Destruction of the anal gland epithelium might explain the occasional spontaneous healing of a fistula

Bacteriology



- Escherichia coli (22%)
- Enterococcus spp. (16%)
- Bacterioides fragilis (20%)

Acute phase (abscess)

symptoms

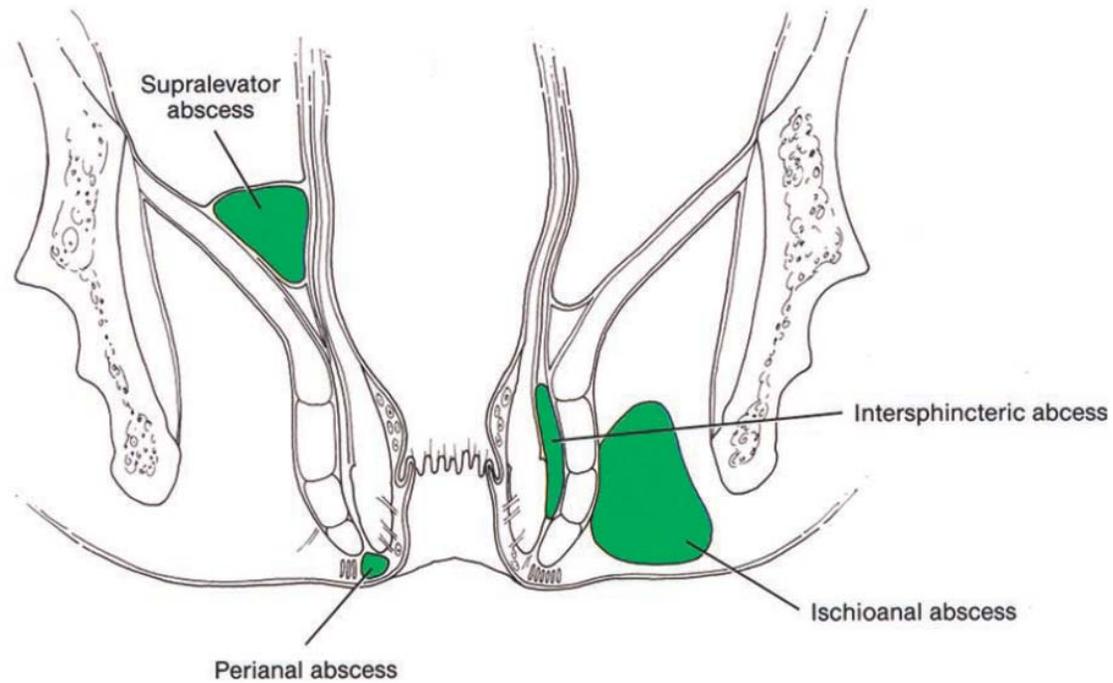
- **acute pain** in the anal region. Pain occurs with sitting or movement and is usually aggravated by defecation and even coughing or sneezing.
- **Swelling**
- purulent anal discharge
- bleeding
- General symptoms include malaise and pyrexia

Acute phase (abscess)

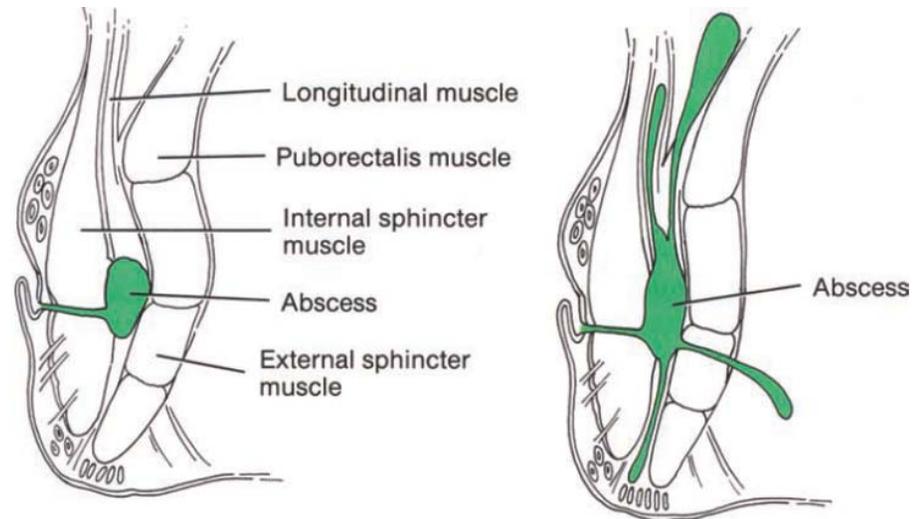
Findings

- **Tender induration**
- Pus may be seen exuding from a crypt
- Examination under anesthesia is not only justified but also indicated
- Suprlevator abscess, a tender mass in the pelvis may be diagnosed by rectal or vaginal examination. Abdominal examination may reveal signs of peritoneal irritation

Acute phase (abscess) location



Avenues of extension for an anal fistula

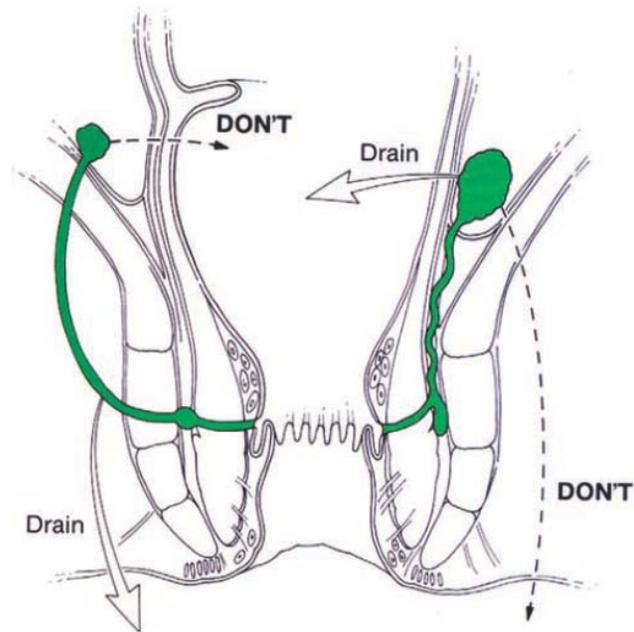


Treatment

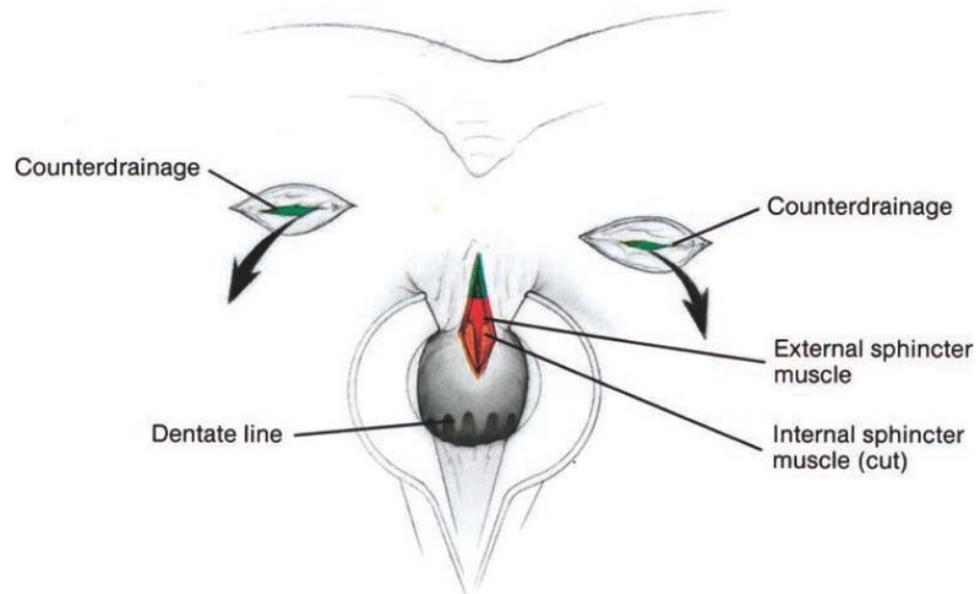


- Drainage
 - Incision and drainage
 - Deroofing
 - Drains and aspiration
- Antibiotics; mostly unneeded except
 - Local sepsis
 - Systemic sepsis
 - Immunocompromised host
 - Others, e.g. prosthetic valve ...

Drainage of a supralelevator abscess



incision and drainage of a horseshoe abscess.



chronic phase (fistula)

history



- ❑ the patient's history will reveal an abscess that either
 - burst spontaneously or
 - required drainage
- ❑ small discharging sinus

chronic phase (fistula)



- External opening usually can be seen as a red elevation of granulation tissue with purulent serosanguinous discharge on compression.
- Opening is sometimes so small that it can be detected only when palpation around the anus expresses a few beads of pus

chronic phase(fistula)



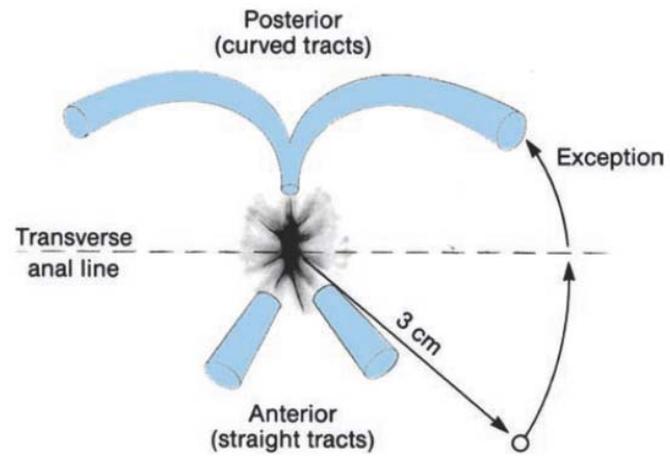
- An external opening adjacent to the anal margin may suggest an intersphincteric tract
- A more laterally located opening would suggest a transsphincteric one
- The further the distance of the external opening from the anal margin, the greater is the probability of a complicated upward extension
- increasing complexity and increasing laterality and multiplicity of external openings also has been observed



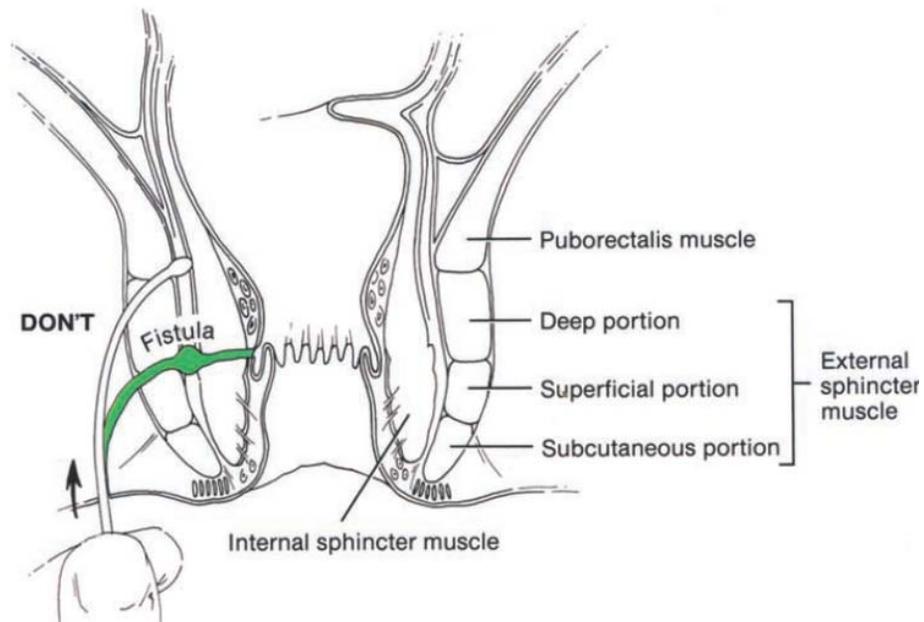
chronic phase(fistula)

- palpate the skin since with a superficial fistula a cord structure can be felt just beneath the skin leading from the secondary opening to the anal canal
- internal opening might be palpable
- crypt of origin is often retracted into a funnel by pulling the fibrous tract leading to the internal sphincter; this state is called the funnel, or “herniation sign” of the involved crypt

Goodsall's rule



Probing of the fistulous tract



probing



INVESTIGATION

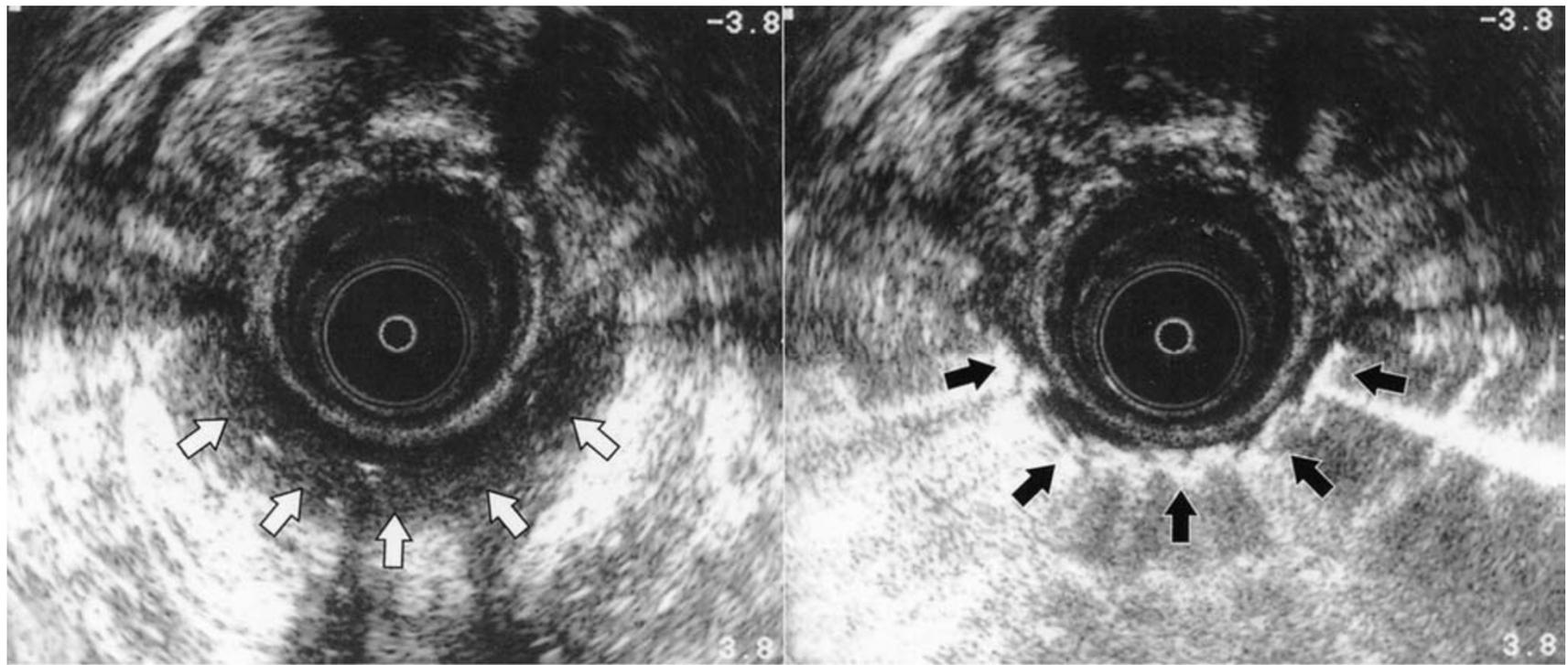


- Anoscopy and sigmoidoscopy
- Fistulography
- Endoanal Ultrasonography
- Magnetic Resonance Imaging
- Endoanal Magnetic Resonance Imaging

Fistulography



Endoanal Ultrasonography



A

B

MRI



FISTULA-IN-ANO

INCIDENCE



- Men predominate in most series with a male-to-female ratio varying from 2:1 to 7:1
- Age distribution is spread throughout adult life with a maximal incidence between the third and fifth decades

FISTULA-IN-ANO

DEFINITIONS



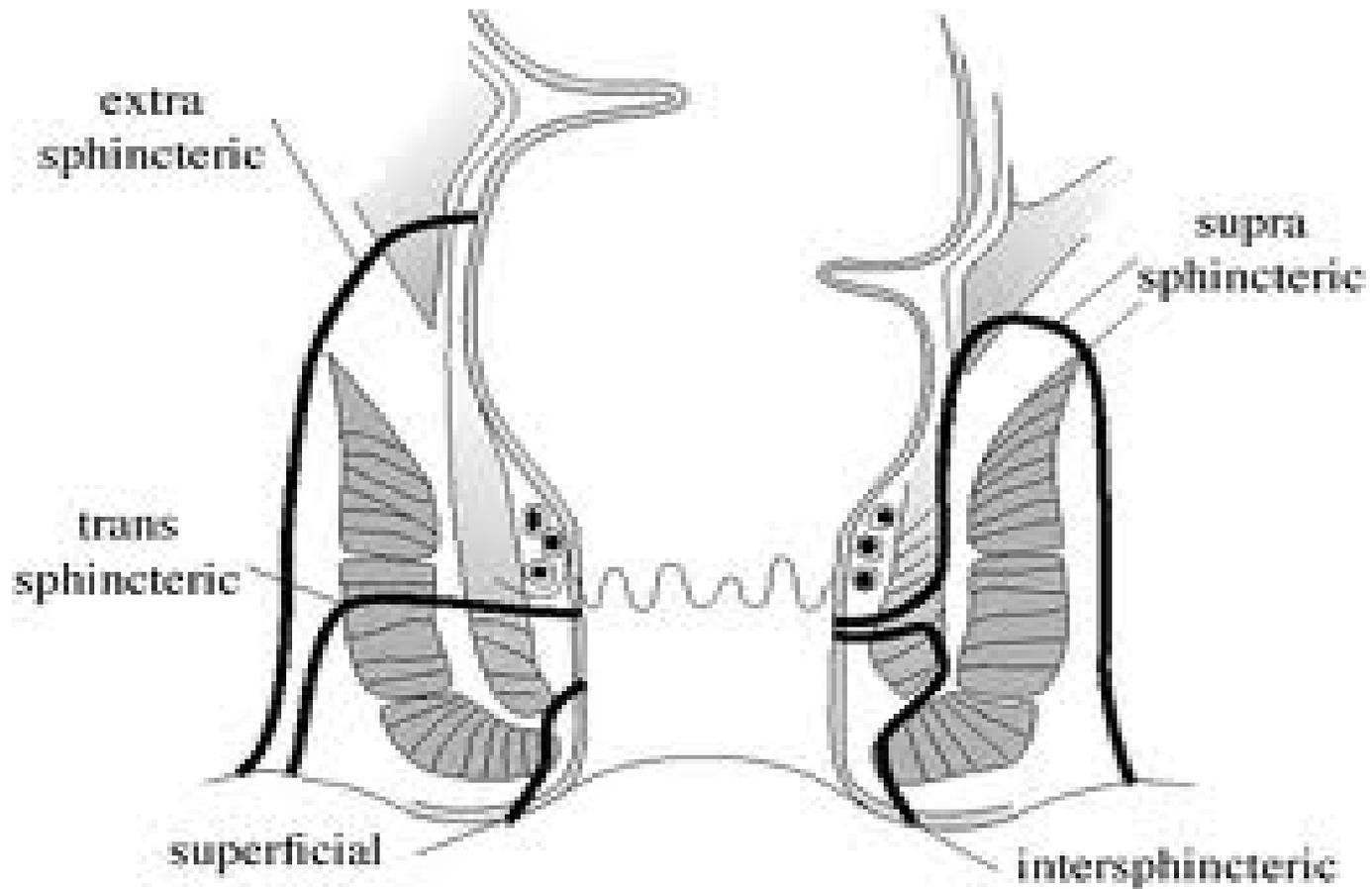
- **COMPLEX**; more than one tract (branching)
- **HIGH**; the main tract or a branch passes to the level of anorectal ring
- **HORSE-SHOE**; the tract passes on both sides of the midline

INCIDENCE



- Intersphincteric, 70%
- Transsphincteric, 23%;
- suprasphincteric, 5%
- extrasphincteric, 2%.

FISTULA-IN-ANO types

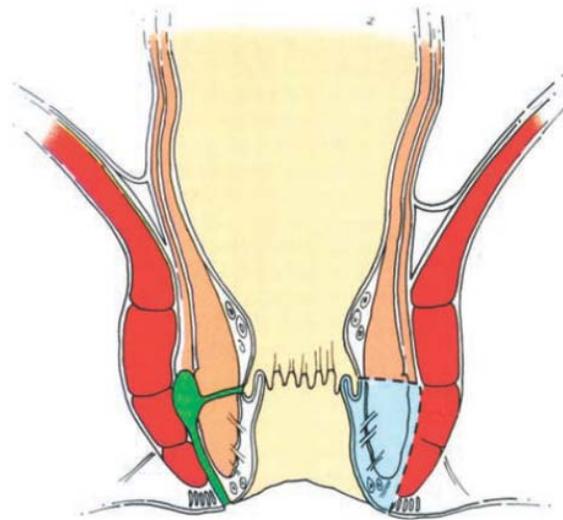


FISTULA-IN-ANO

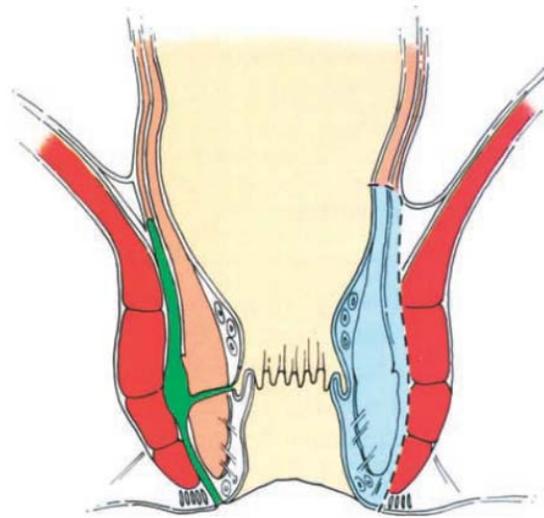
principles of management

1. the primary opening of a tract must be identified
2. the relationship of the tract to the pubrorectalis muscle must be established;
3. division of the least amount of muscle in keeping with cure of the fistula should be practiced;
4. side tracts should be sought
5. the presence or absence of underlying disease should be determined

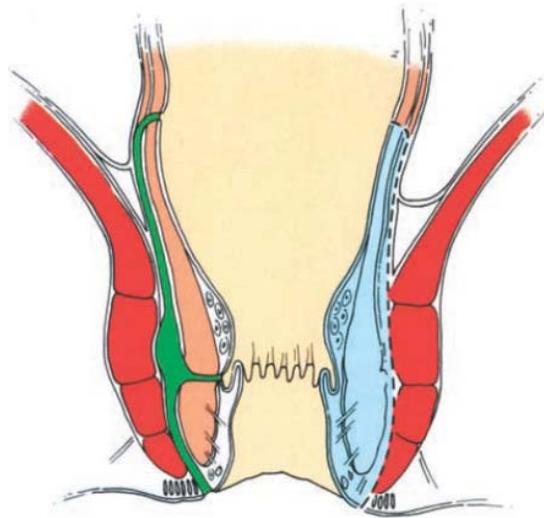
Intersphincteric fistula: simple low tract



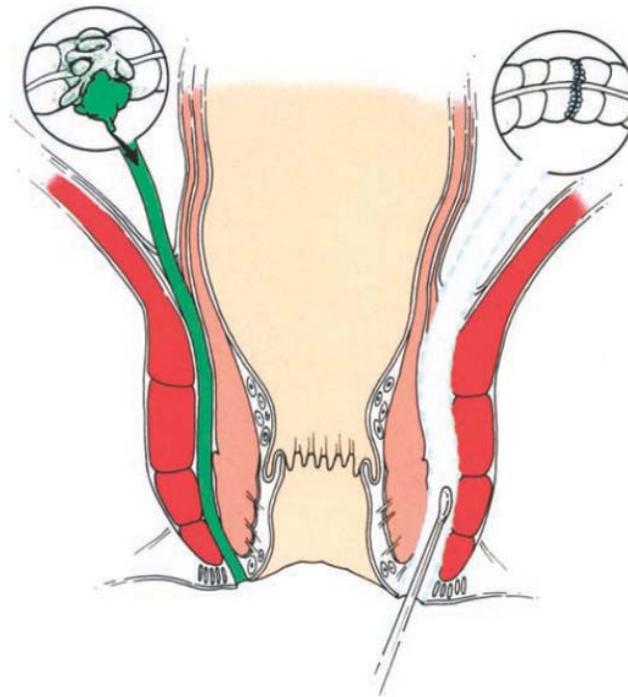
Intersphincteric fistula: high blind tract



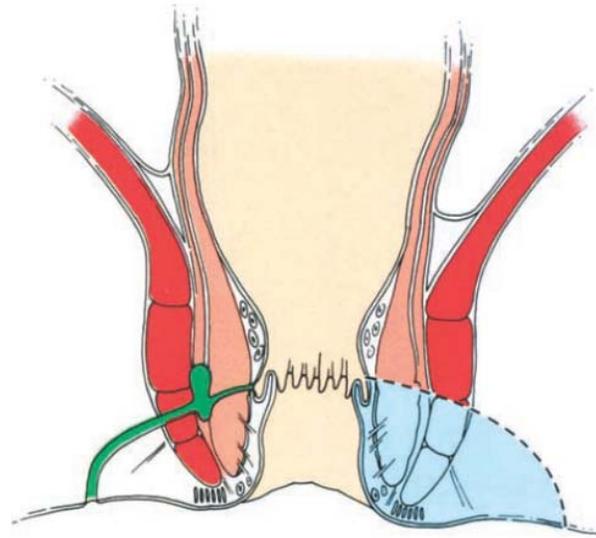
Intersphincteric fistula: high tract with a rectal opening



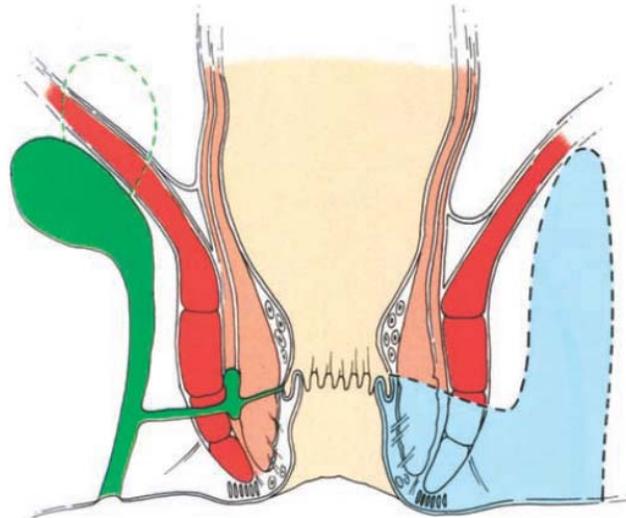
Intersphincteric fistula: secondary to pelvic disease



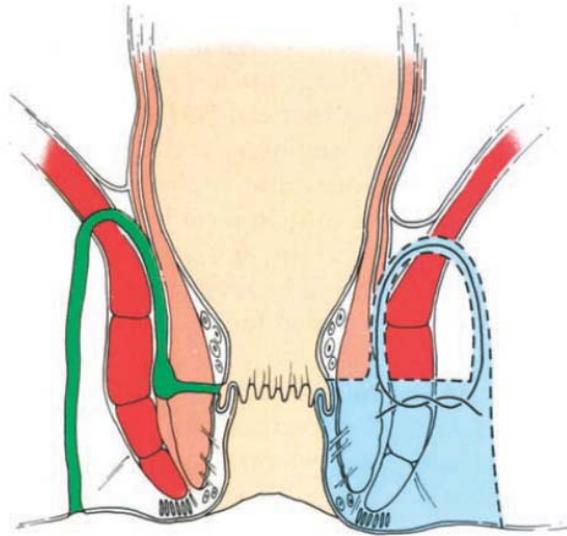
Transsphincteric fistula: uncomplicated type



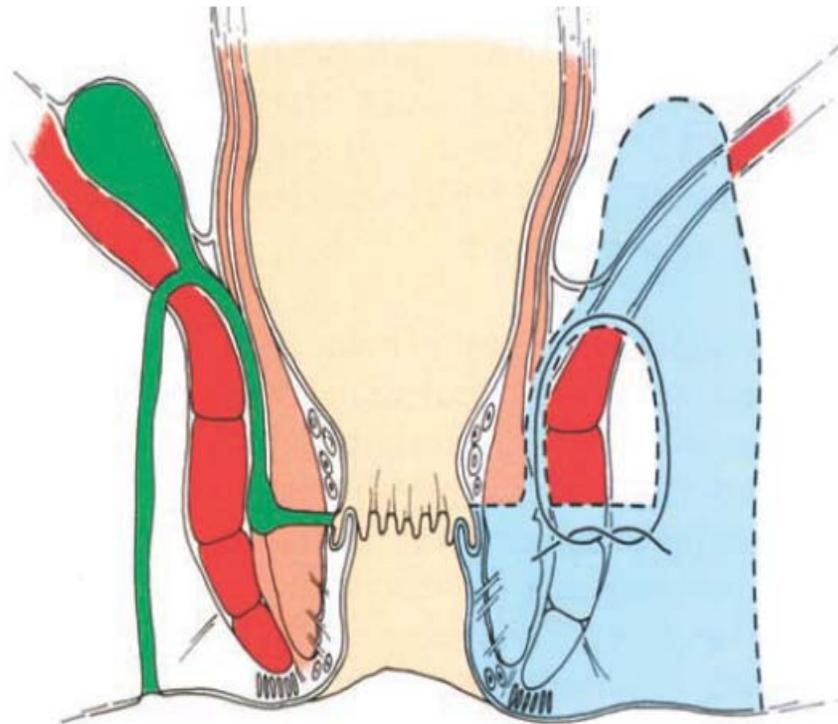
Trans-sphincteric fistula: high blind tract



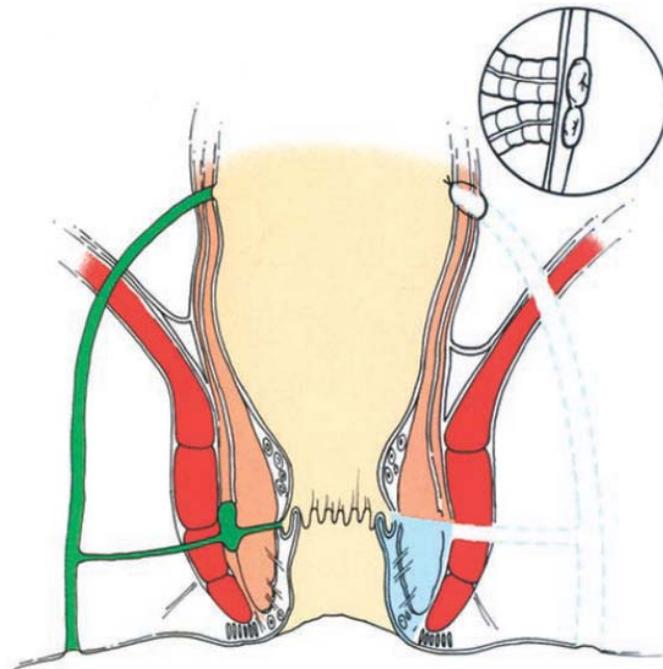
Suprasphincteric fistula: uncomplicated type



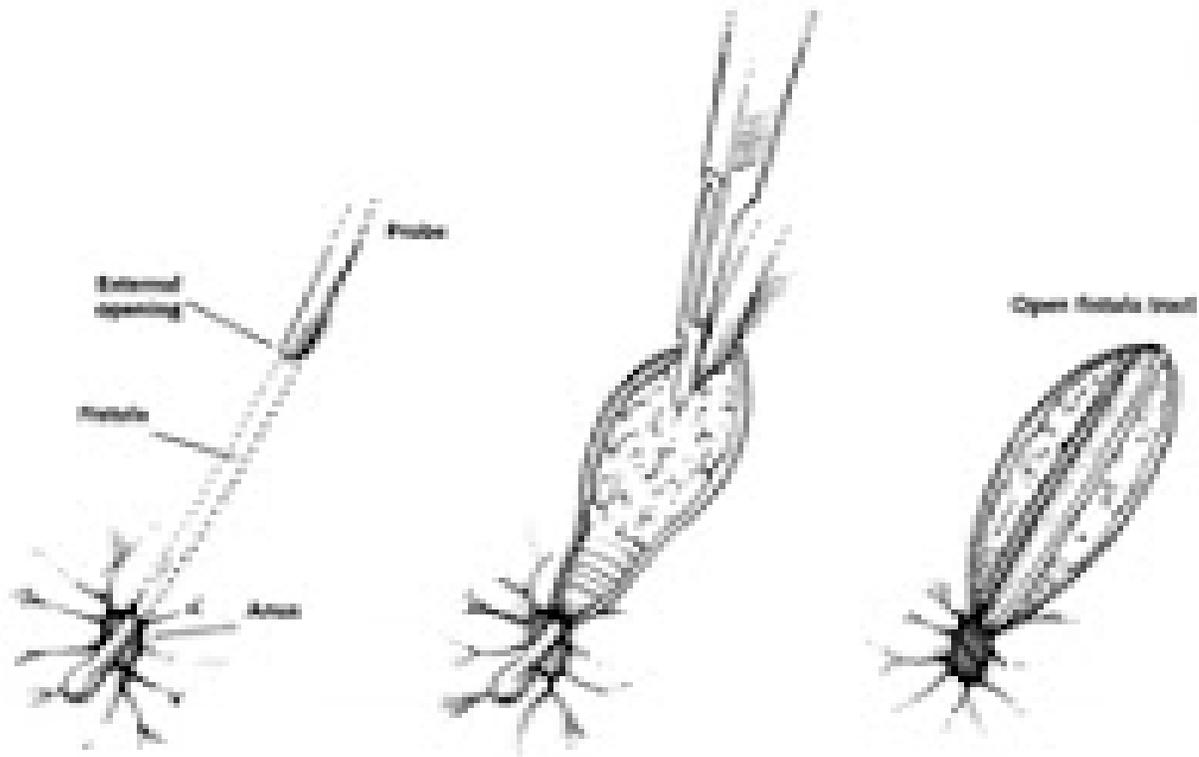
Suprasphincteric fistula: high blind tract



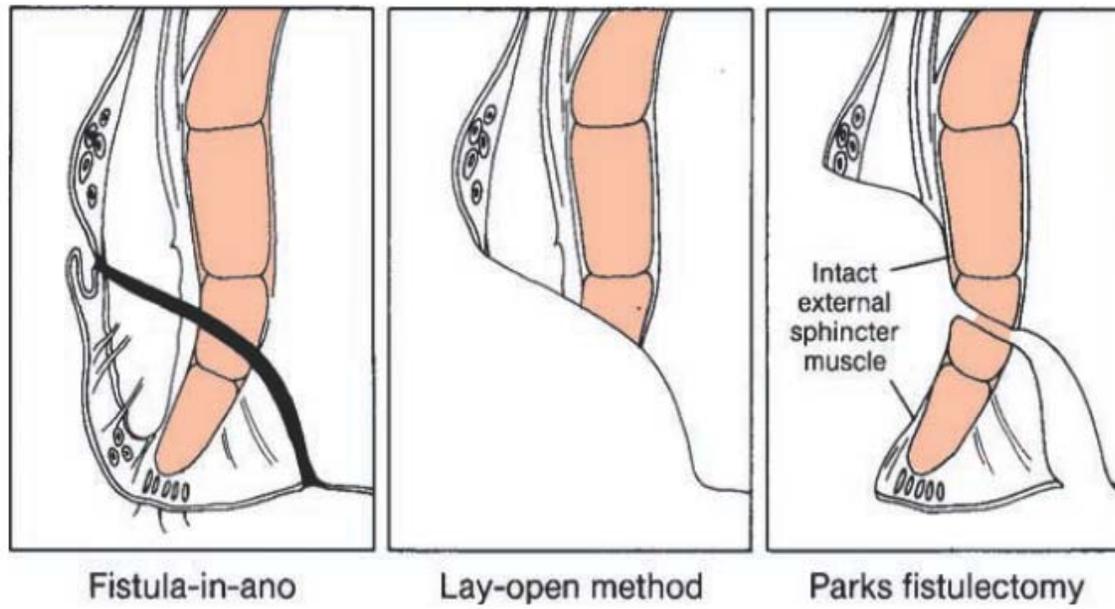
Extrasphincteric fistula: secondary to anal fistula



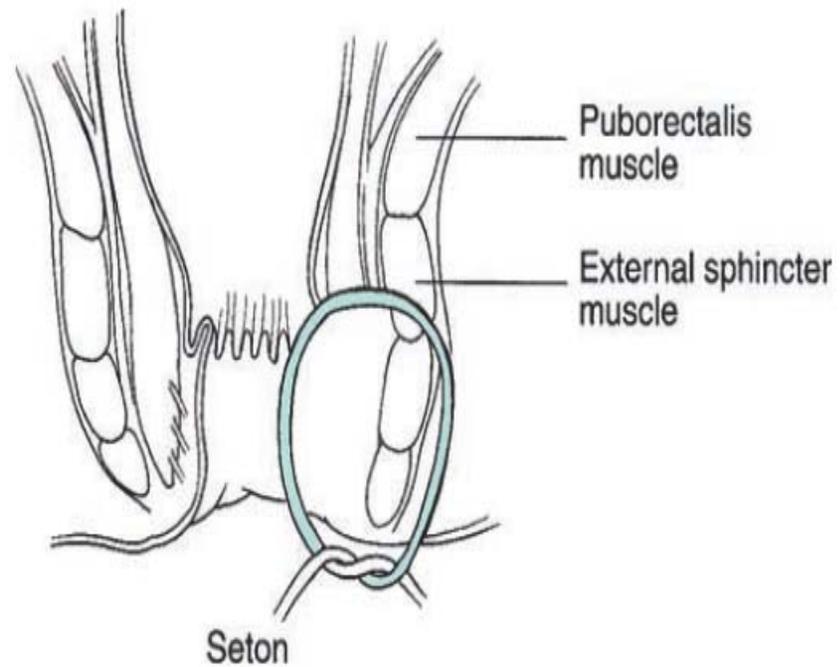
Fistulotomy



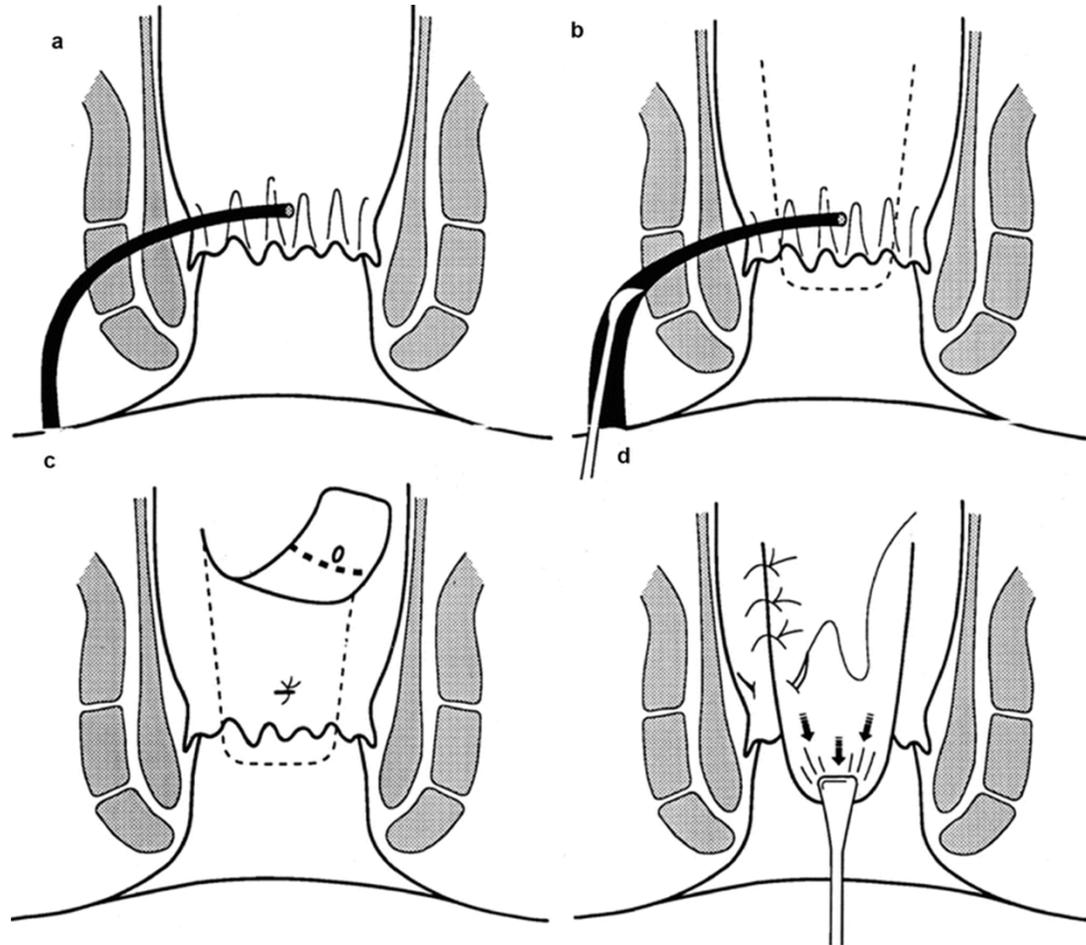
Fistulotomy vs. fistulectomy



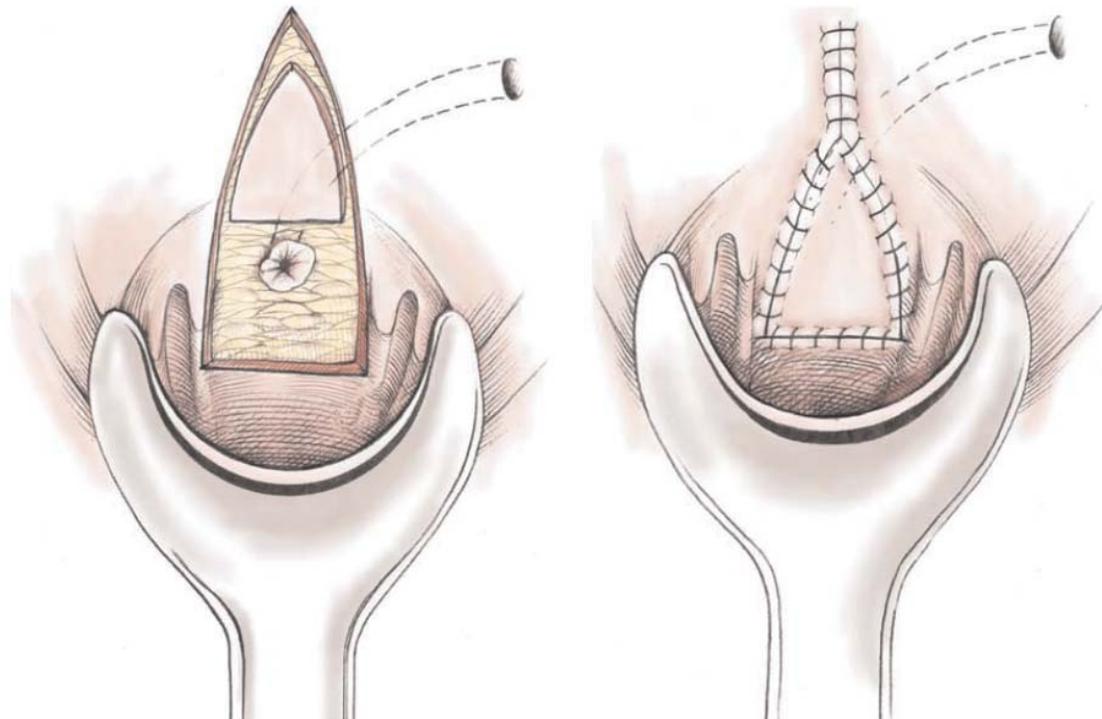
Seton insertion (draining)



Advancement rectal flap



Dermal Island Flap Anoplasty



Other procedures

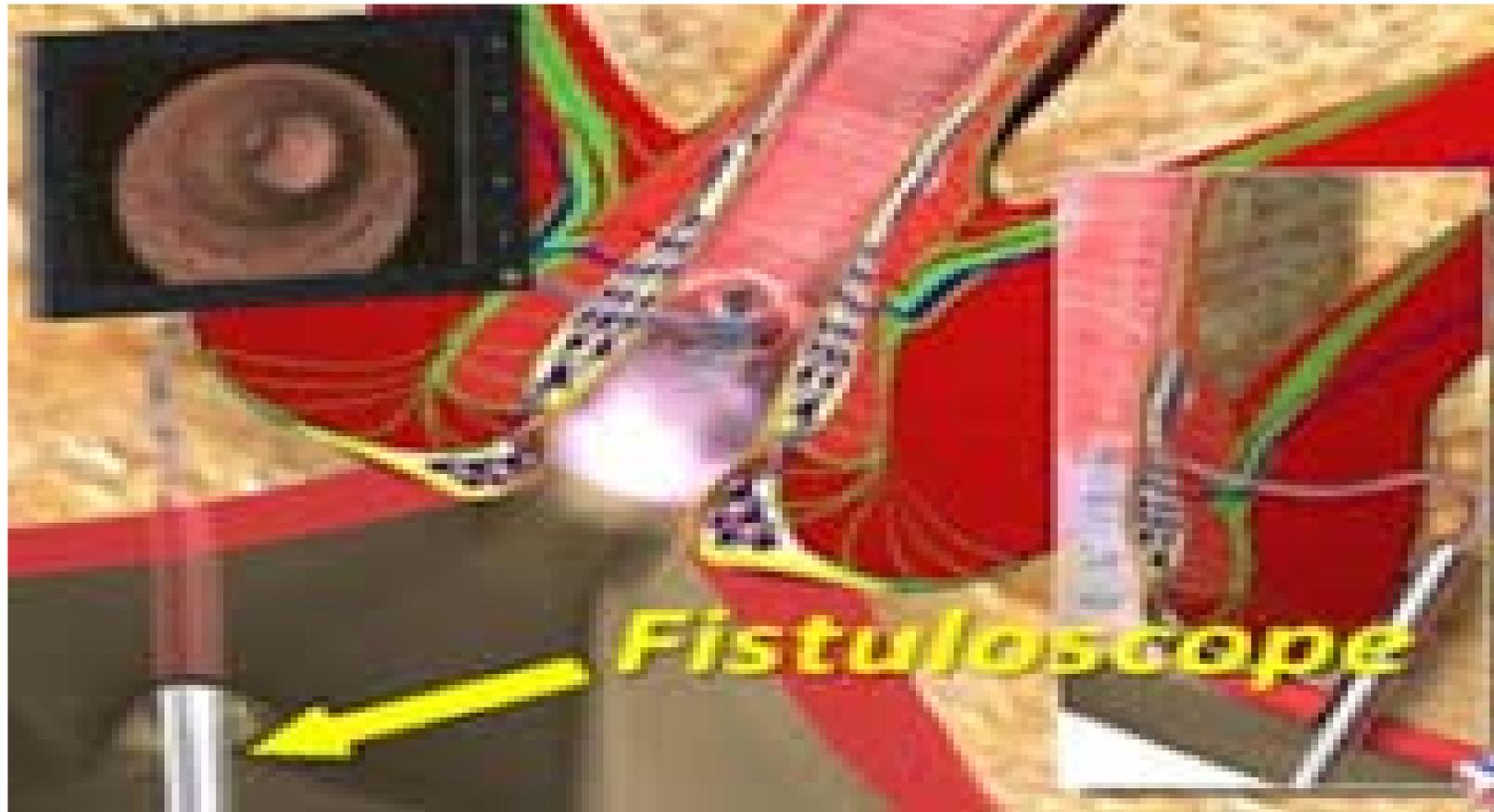


- Fistulectomy and Primary Closure
- Video assisted anal fistula treatment
- Cutting Seton
- Fibrin Glue
- Anal Plug
- Lift Technique
- ablation: laser and cautery

Fibrin Glue



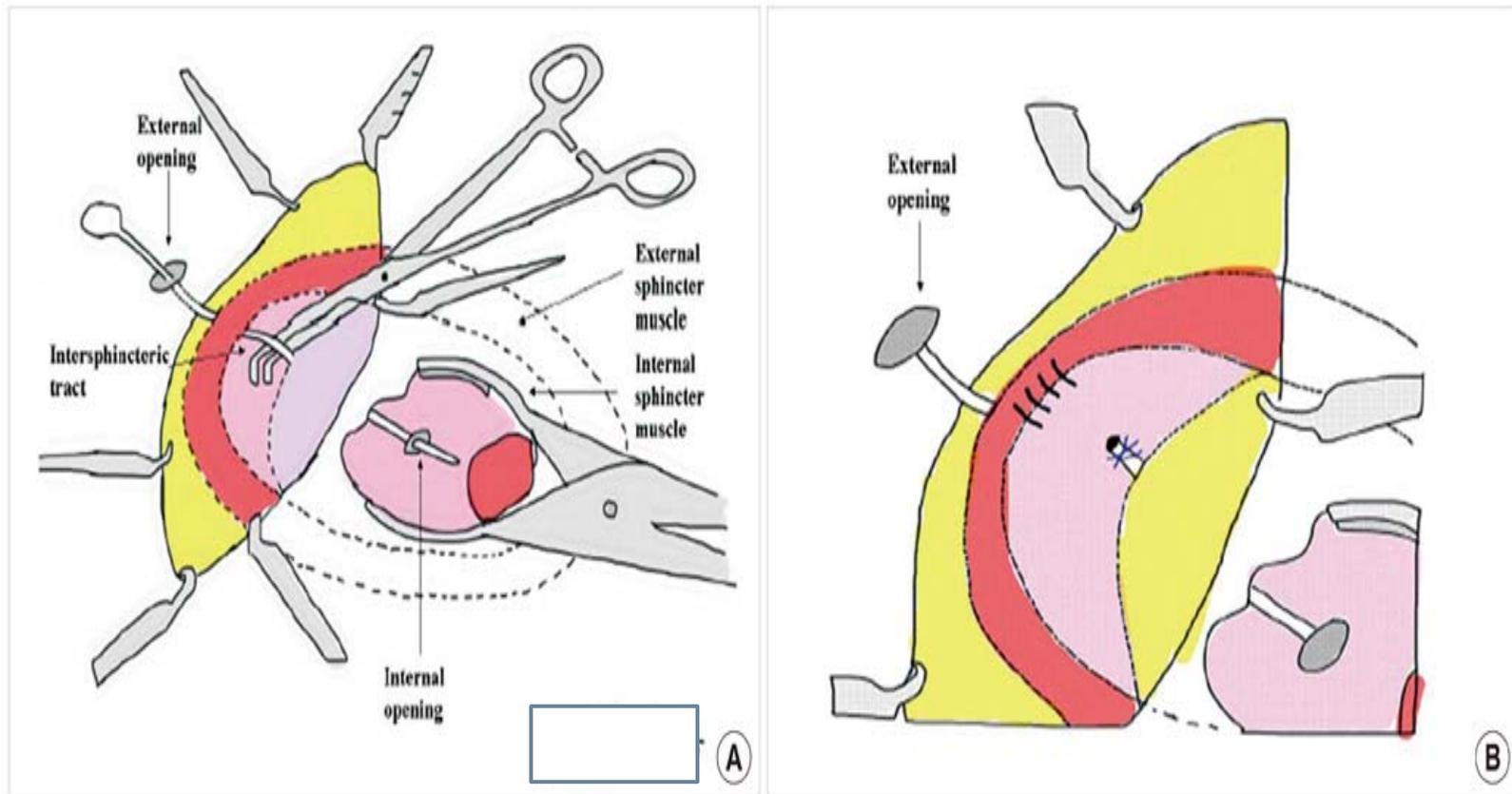
Video assisted anal fistula treatment



Anal Plug



Intersphincteric fistula tract removal



Laser closure

