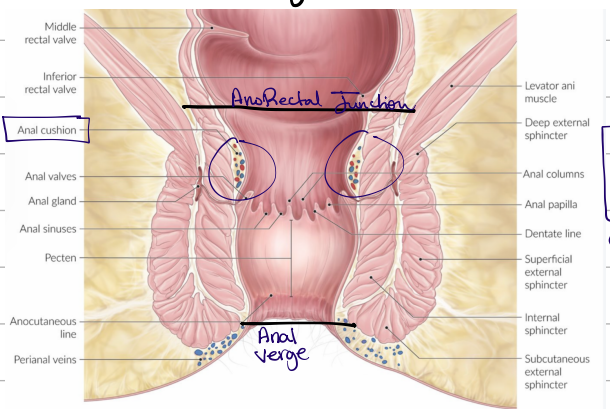
Hemorrhoids

Normal Anatomy:



Normally, There are anal cushions made of

- Arterio Venous Anastomoses
- Smooth Muscle Treitz Musde
- Elastic Tissue.

Corpus Cavernosum recti = Erectile tissue.

Found above the dentate line, corresponding to internal hemorrhoidal plexuses, in the locations corresponding to 3, 7, 11 o'clock in lithotomy position left lateral, right posterior & right anterior

watershed area ← Dentate line is the line that separates between the upper part and lower part of the anal canal. They have major differences.

	Above Dentate line	Below Dentate line.
Histology	Simple Columnar	Stratified squamous.
Blood Supply	superior rectal artery	Inferior rectal artery
Venous Drainage	portal system.	IVC → systemic drainage.
Innervation	Visceral innervation	Internal pudendal nerve
Clinical Relevance	Internal hemorrhoids. Adenocarcinoma Anorectal Varices.	External hemorrhoids Squamous Cell Carcinoma Anal Fissure

* Role of the Anal Cushions!
  - ↳ Aid in the continence. Support the sphincters as it contributes to resting anal pressure
  - ↳ Anal sampling. Differentiate between Solid, liquid, gas.

Hemorrhoids

dilated, engorged, congested submucosal venous plexuses (the anchoring action of the muscle & elastic fibers is disrupted).

It is also percipitated by the factors:

↳ Increase Abdominal pressure
- ↳ Constipation.
- ↳ Straining
- ↳ Pregnancy
- ↳ Chronic cough.
- ↳ Diarrhea due to frequent bowel movement

↳ Aging, Hereditary

↳ Erect posture.

Hemorrhoids

Internal hemorrhoids

→ develop above the dentate line

→ typically PAINLESS

→ SYMPTOMS:

* Painless red bleeding, typically at the end of defacation. May be occult, check for anemia.
* Pruritus and itching.
* Feeling of Rectal fullness
* Mucous leakage
* Prolapse

- Classified into 4 grades according to prolapse:
  - grade I: No prolapse
  - grade II: prolapses but reduces at rest
  - grade III: prolapse & reduce manually
  - grade IV: Irreducible prolapse
    - mostly complicated ↳ may be strangulated and thrombosed.
    - ↳ is differentiated from the external hemorrhoids by checking the base of the prolapse.
    - ↳ gangrene, ulceration

Internal hemorrhoids are mainly the ones occuring at the 3, 7, 11 o'clock sites.

External hemorrhoids

→ Below the dentate line

→ Somatic innervation that triggers Pain

→ Symptoms

Bright red bleeding.

Perianal mass.

Pruritus

Pain → Especially when Thrombosed.

Thrombosis occur due to Stasis

typically resolves within 7-14 days

↳ Typically leaves Skin Tags

appear as tender, dark, purplish nodule at anal verge.

Differential Diagnoses

↳ Skin Tags.
benign, painless folds of skin at the anal verge that are residues of previous episodes of inflammation or thrombosed hemorrhoid

↳ Hypertrophied anal papillae

↳ Rectal polyps.

↳ Anorectal cancer.

↳ Anorectal varices.

↳ Anal fissures.

↳ Rectal prolapse.

↳ IBD.

For Diagnosis: Left Lateral position.

- ↳ DRE
- ↳ Anoscopy or Proctoscopy.
- ↳ Colonoscopy if malignancy is suspected

* External Hemorroids & Irreducible Internal hemorrhoids are vivid on inspection.
* Internal prolapsed can be examined by increasing the intra-abdominal pressure during DRE (eg: valsalva maneuvers, straining) ⟶ Soft impalpable
* 1° Internal hemorroids can be complicated by 2° /daughter hemorroids.

Treatment

- For 1st + 2nd degree ⟶ Medical Treatment
  - ↳ warm Sitz
  - ↳ ↑ high fiber diet, Laxatives (Bulk forming).
  - ↳ Cortico Steroids.
  - ↳ Vasoconstrictors (Ephedrine).
  - ↳ Local Creams or Jels. (Lidocaine).
- If doesn't respond to medical treatment
  - ↳ Sclerotherapy.
  - ↳ Rubber band ligation.
  - ↳ Infra red coagulation.

Effectiveness is Questioned.

- ↳ Cryotherapy.
- ↳ Doppler guided hemorrhoidal artery ligation.
- ↳ Anal Stretch

- Grade 3 + 4 ⟶ Surgery : Hemorrhoidectomy.

Milligan-Morgan. / Parks-Ferguson

- Closed Technique ⟶ Primary Te
- Open Technique ⟶ 2ndary Intention.
- Laser Hemorrhoidectomy

External Thrombosed hemorrhoid:

appear as an abrupt anal mass with pain peaking after 48 hrs. It resolves & shrinks within weeks, leaving the skin overlying the thrombus necrotic thus causing bleeding, discharge or infection.

Large thrombus may result in big skin tag.

If presented early ⟶ Incisional surgery

If presented late ⟶ Conservative

Anal Fissure

a longitudinal tear in the mucosa of the anoderm → stratified squamous non-keratinized yet devoid of hair follicles & glands. distal to the dentate line.

Classified based on:

Cause :-

1° primary :-

Due to increased internal sphincter tone. (Hyperactive/Hypertonic)

Most commonly in the posterior commissure "6 o'clock" position, less perfusion, more prone to ischemia.

2° secondary :-

Due to:

Infections : Syphilis, HIV

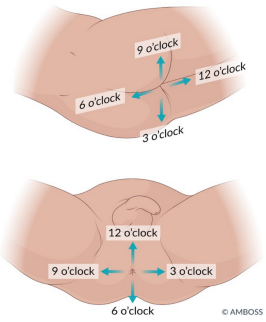
IBDs.

Cancer (Leukemia).

Trauma (post partum, anal abnormality).

Constipation.

occur either anterior, posterior or lateral.



Complications:

Fistula

Abscess.

Duration:

Acute:-

present w/ acute abrupt pain w/ bright rectal bleeding, pruritus

Chronic:- >1 month.

Fibrosis

Hypertrophied anal papillae

Sentinel piles.

* Submucosal Fistula

Symptoms

* Pain in the anus & during defacation.
* bleeding after defacation (streaks)
* Voluntarily avoiding defacation leading to constipation.
* Discharge.
* Sentinel piles / tags

Treatment

Medical

Sitz Bath

Bulk forming laxative

Stool softners.

Pharmacologic agent to relax the sphincter :

Botulinum toxin, hydrocortisone

CCB (Nifedipine).

Nitroglycerine.

The posterior commissure is believed to have a very poor blood supply, which predisposes it to ischemia (exacerbated by poor perfusion during increased anal pressure).

Surgery when refractive to medical.

Sphincterotomy

↳ Partial lateral internal Sphincterotomy

⚠ Risk of incontinence

V-Y Anoplasty

(Anal Advancement flap Technique)

Surgical procedure in which damaged anal tissue

.

Fissurectomy

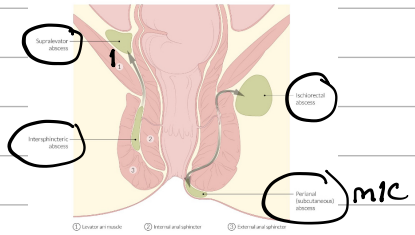
Internal anal sphincterotomy was introduced for treating anal fissures by Eisenhammer6 in the 1950s. It was originally performed posteriorly in the midline, but this often led to the so-called keyhole deformity, and therefore, lateral subcutaneous sphincterotomy was popularized by Notaras7 who first reported it in 1969. According to Notaras, after midline posterior internal sphincterotomy, scarring and epithelization of the gap created by the separation of the edges of the divided internal and subcutaneous external anal sphincter muscles will, in a certain number of cases, result in a characteristic posterior midline furrow deformity.7 A posterior midline incision is associated with a keyhole deformity, which can cause significant problems including anal wetness and soiling. Up to 40% of patients develop some degree of incontinence. A lateral incision is associated with a much lower incidence of soilage and incontinence and is generally the preferred approach.8 Retrospective reviews have provided data comparing posterior midline sphincterotomy with lateral sphincterotomy. Incidence rates for persistence varied from 2 to 25% in the posterior midline sphincterotomy group and from 0 to 10% in the LIS group.9 Although Notaras has reported the development of keyhole deformity to be due to posterior internal sphincterotomy, there have been reports of keyhole deformity after LIS or in patients without any history of anal interventions.7-10 Therefore, the aim of the present study is to share our experience of keyhole deformity, to emphasize the surgical significance of this entity, and to discuss the possible strategies in the treatment of the deformity.

Anorectal Abscess

Acute phase.

↳ Glandular obstruction → bacterial overgrowth + pus → Abscess formation

According to the location they are classified into :- (Potential Spaces for Abscess).



m/c

⇒ Acute. (sudden + throbbing)
→ pain (↑ with sitting or defecation → fear → Constipation).
→ swelling
→ fever, chill, Malaise.
→ Pus. discharge.

→ very tender so Examination should be under GA (very tender).

+X → Drainage. surgically :- ① incision & drainage ② Deroofing ③ Drain & Aspiration.

* Complications :- Fistula ↑ upward extention.

→ Post op IV antibiotics ?? Local vs Systematic sepsis.

Recurrance ↓ Deep & local Spread. ↓ Cellulitis ↓ Sepsis ↓ UHO ↓ leukocytosis → SIRS DM Immunocom

Chronic phase :- ↑ burst spont. abscess → Abscess that req. drainage.

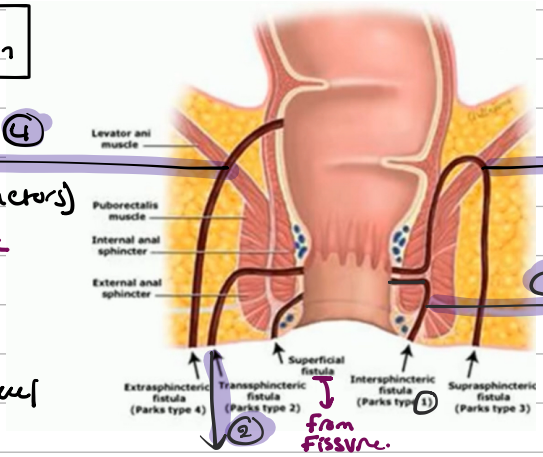
Anorectal fistula

Faecalith ↑ trauma.

→ Fistula is a connection between 2 epitheliums. obstruct. chronicity
(Here :- anal canal ↔ perianal skin).

→ most commonly occurs after Abscess. (cryptogenic 1+2+3) orginating from crypt Glands.

Parks Classification



④ Extrasphincteric (no relation to sphincters)
Usually due to pelvic disease.

③ 1- cross internal
2- intersphincteric plane.
↓ Supra sphincteric.

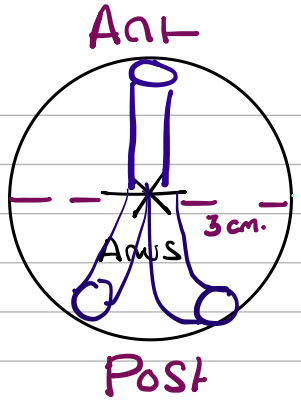
① 1- thro the internal sphicter
2- intersphicteric plane.
↓ Intersphicteric fistula.

② 1- cross both internal / External sphin.
↓ trans sphict.
from fissure.

⚠ Note that 1+2+3 all originate from the level of pectinate line.

Good Salls Rule

→ if the opening was Ant (within the 3cm margin) it will follow a straight to midline rout.
→ if it was posterior it will curve and end in the post. midline.



⚠ Anything out side the 3cm, it will curve and open into the post. midline.

→ External opening :-

- seen: Red elevation + discharge on Compression.
- palpable only if small.

* if the External opening

- Adjacent to Anal margin → intersphinct fistula.
- more lateral → trans. sphic. fistula.
- Most lateral → > Probability of a complicated upward extension.

→ Investigation :-

if crhons is suspected.

* Anoscopy or sigmoidoscopy.
* Fistulography. not used
* Endo anal US (Best)
* MRI.

→ Management Principles.

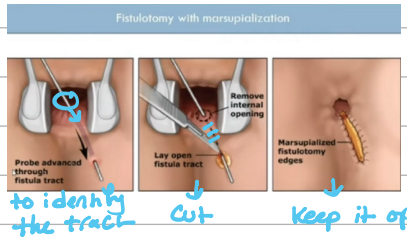
① identify Primary opening → relationship between the tract & Puborectalis.

② Division of the least amount of muscles.

③ side tract should be seen (if any).

→ Manage :-

① fistulOTOMY + marsupialization. (keeping it open for continuous drainage.)



② fistulECTOMy → not good in the term of healing.

③ Setons

- Draining
- Cutting
- Medicated. → to induce fibrosis.

④ Rectal flap.

Other procedures

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