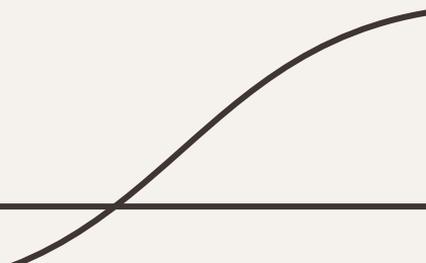


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# Painful Anal Conditions

Supervised by Dr. Aborajooch Emad Aref.



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# 01

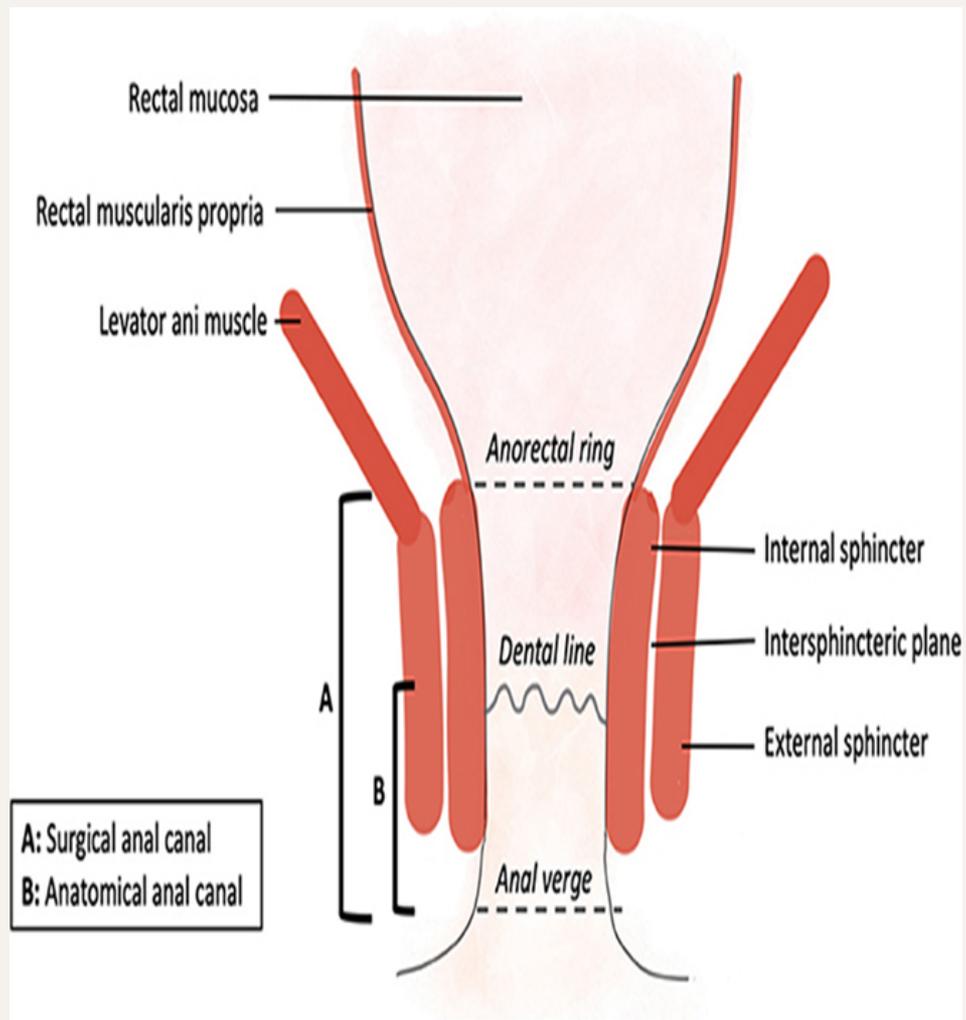
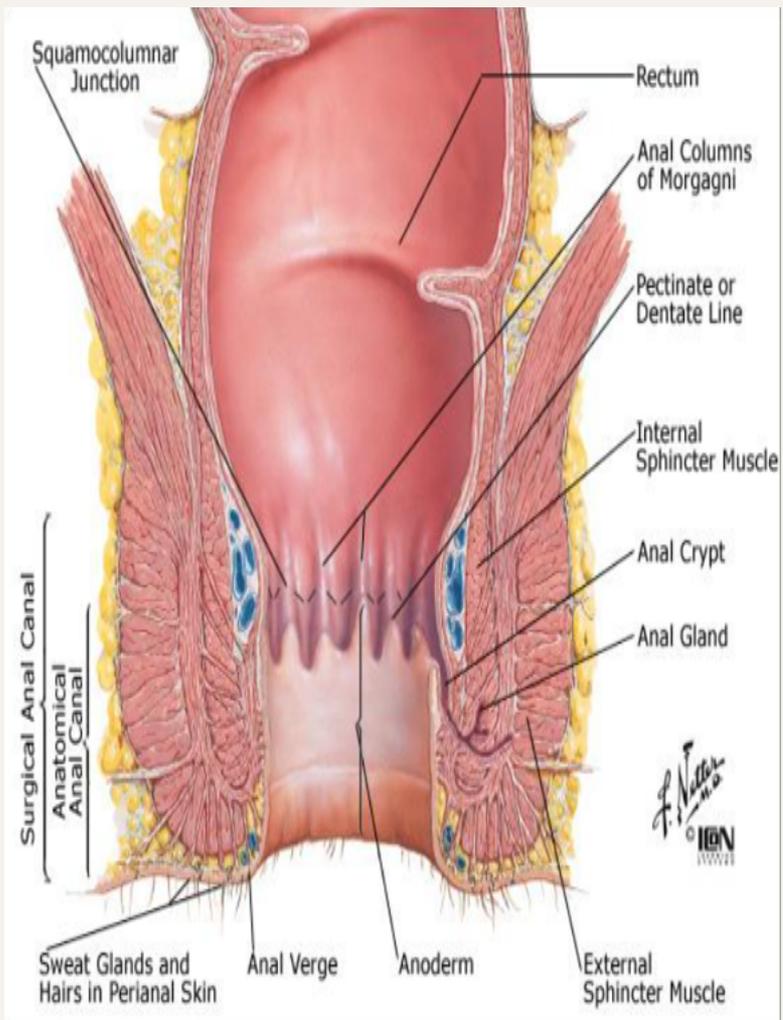
## General anatomy of the anal canal & examination of the anus

# Anatomy of the anal canal

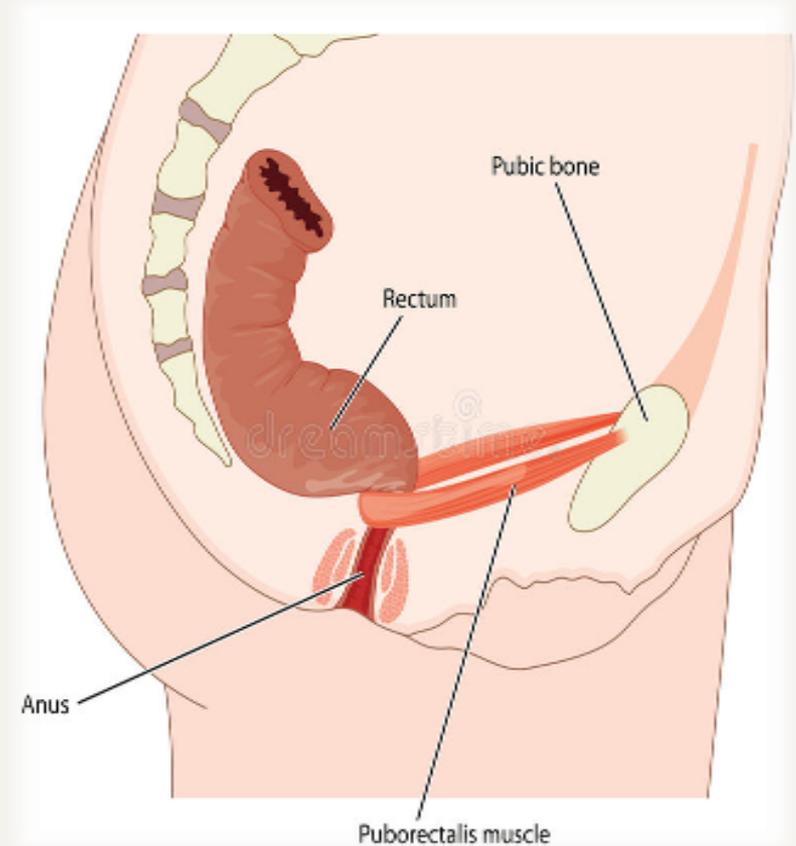
- The **anal canal** commences at the level where the rectum passes (Anorectal Ring) through the pelvic diaphragm and ends at the anal verge.
- **Dentate line** : the most important landmark morphologically and surgically, surrounded by longitudinal mucosal folds, known as the columns of Morgagni, into which the anal crypts empty, these crypts are the source of cryptoglandular theory.
- **Anatomical Anal Canal**: Below the dentate line (from dentate line to Anal Verge).
- **Surgical Anal Canal**: commences from Anorectal Ring to Anal Verge (measures 2 to 4 cm in length and is generally longer in men than in women).
  
- **The anorectal ring**:
  - Marks the junction between the rectum and the anal canal, can be clearly felt digitally, especially on its posterior and lateral aspects.

Formed by the joining of :

- The puborectalis muscle,
- The deep external sphincter
- Conjoined longitudinal muscle
- The highest part of the internal sphincter.



- **The puborectalis muscle:**
  - Part of the funnel-shaped muscular pelvic diaphragm.
  - Maintains the angle between the anal canal and rectum.
  - Important component in the continence mechanism.
  - The position and length of the anal canal, as well as the angle of the anorectal junction, depend on the integrity and strength of the puborectalis muscle sling.

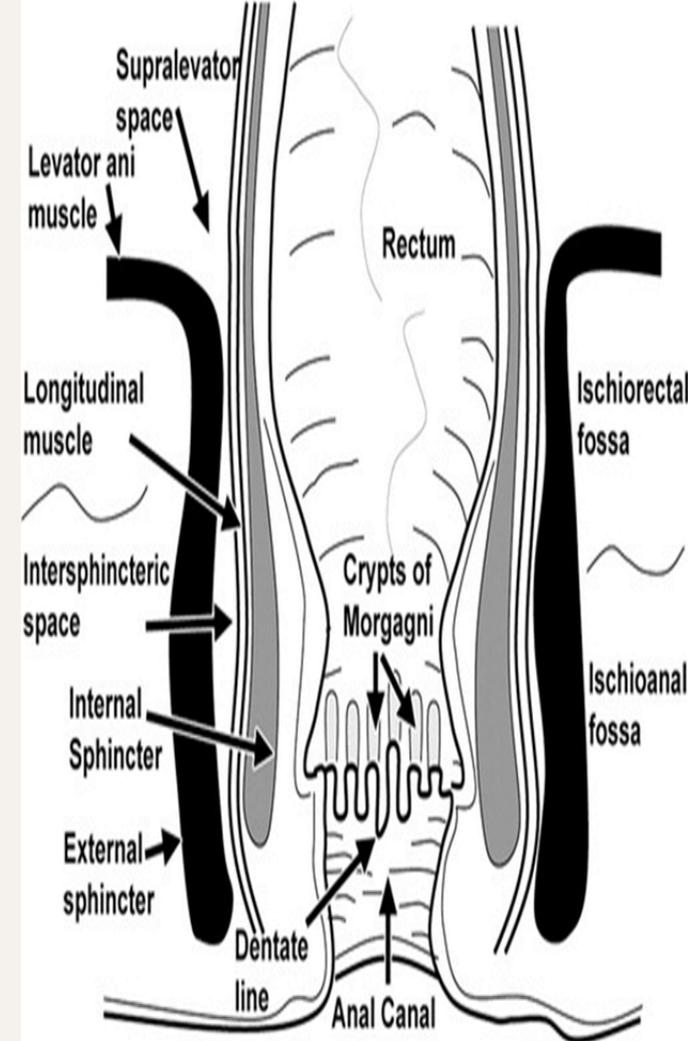


## The external sphincter

- It is a single muscle, which is variably divided by lateral extensions from the longitudinal muscle layer into deep, superficial and subcutaneous portions, forms the bulk of the anal sphincter complex.
- It is a somatic voluntary skeletal muscle.

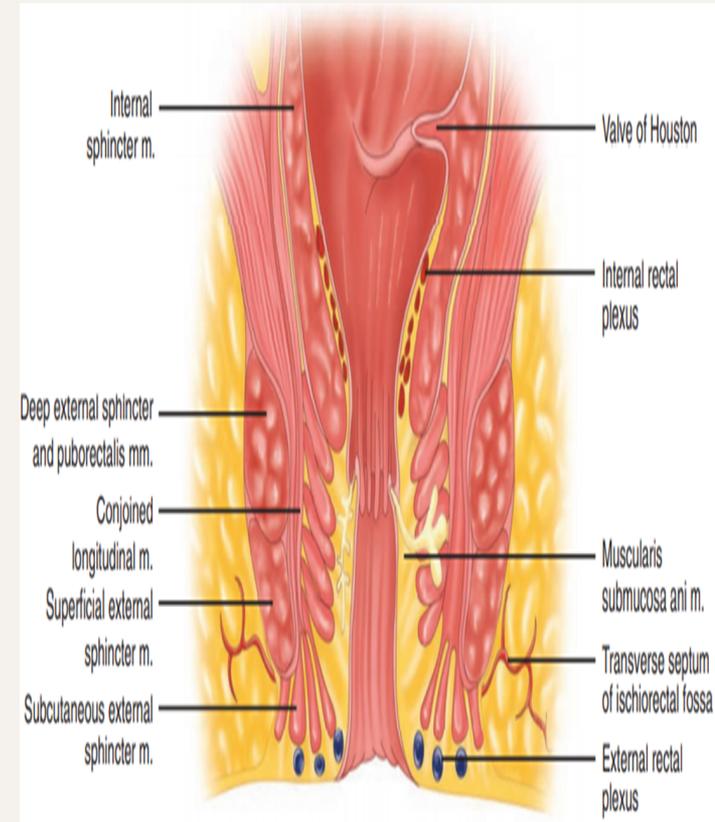
## The Intersphincteric plane

- Potential space exist between the external sphincter muscle laterally and the longitudinal muscle medially.
- It contains Intersphincteric anal glands, it is also a route for the spread of pus, which occurs along the extensions from the longitudinal muscle layer.
- The plane can be opened surgically to provide access for operations on the sphincter muscles.



- **The internal sphincter:**
  - It is the thickened (2–5 mm) distal continuation of the circular muscle coat of the rectum, commences where the rectum passes through the pelvic diaphragm and ends above the anal orifice
  - Involuntary muscle, in a tonic state of contraction maintaining the continence, the base line of anal canal tonic pressure come from it.
  - Its lower border palpable at the Intersphincteric groove below which lie the most medial fibers of subcutaneous external sphincter and separated from it by the anal intermuscular septum.
  - When exposed during life, it is pearly-white in color and its circumferentially placed fibers can be seen clearly.

- **The longitudinal muscle:**
  - It is a direct continuation of the smooth muscle of the outer muscle coat of the rectum.
  - During defecation, its contraction widens the anal lumen, flattens the anal cushions, shortens the anal canal and everts the anal margin.
  - Subsequent relaxation allows the anal cushions to distend and thus contribute to an airtight seal.

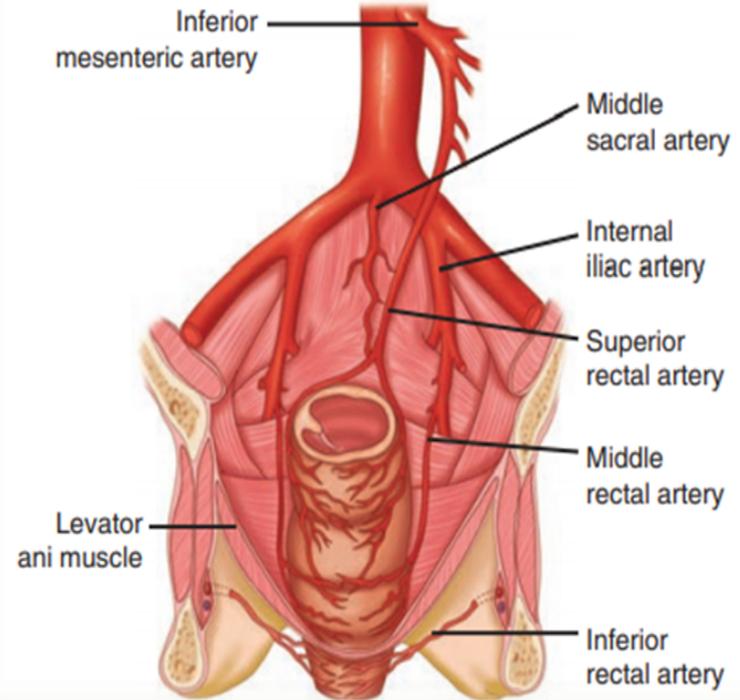


- **Blood supply of the anal canal:**

- Superior rectal artery.
- Middle rectal arteries.
- Inferior rectal arteries.

- **Venous drainage of the anal canal:**

- The anal veins are distributed in a similar fashion to the arterial supply.
- The upper half of the anal canal is drained by:
  - (1) The superior rectal veins, tributaries of the inferior mesenteric vein and thus the porto-mesenteric venous system.
  - (2) the middle rectal veins, which drain into the internal iliac veins.
- The lower half of the anal canal and the subcutaneous perianal plexus of veins are drained by
  - (3) the inferior rectal veins.
- They eventually join the internal iliac vein on each side.



## Lymphatic drainage:

- Above the dentate line drains into post-rectal lymph nodes and then to para-aortic nodes.
- Below the dentate line drains into the superficial and then to deep inguinal lymph nodes.

## The anal glands:

- Anal glands may be found in the submucosa and intersphincteric space.
- They drain via ducts into the anal sinuses at the level of the dentate line.
- Their function is unknown, although they secrete mucin which lubricates the anal canal to ease defecation.
- The importance of intersphincteric anal glands is that they are widely considered to be the potential source of anal sepsis, either **acute**, presenting as perianal, ischiorectal or even pelvic sepsis, or **chronic**, presenting as a cryptoglandular (non-specific) anal fistula.

# Examination of the anus:

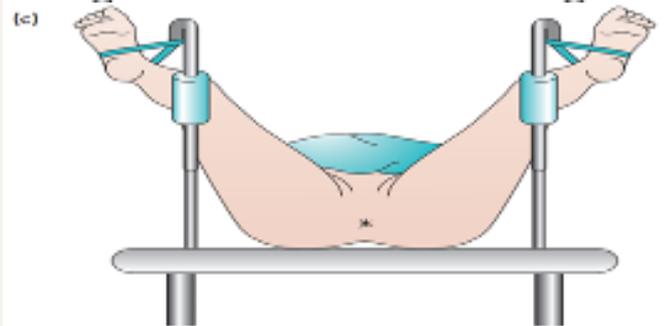
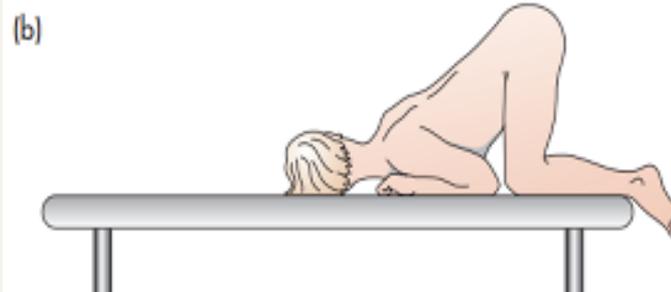
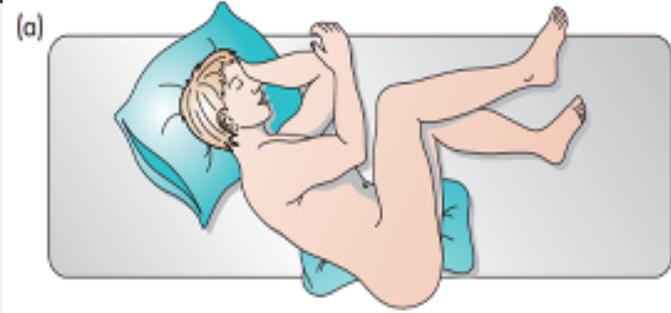
## Positions:

- (a) The left lateral (Sims)
- (b) Knee-elbow(Prone-Jackknife)
- (c) Lithotomy

The buttocks are gently parted to allow inspection of the anus and perineum.

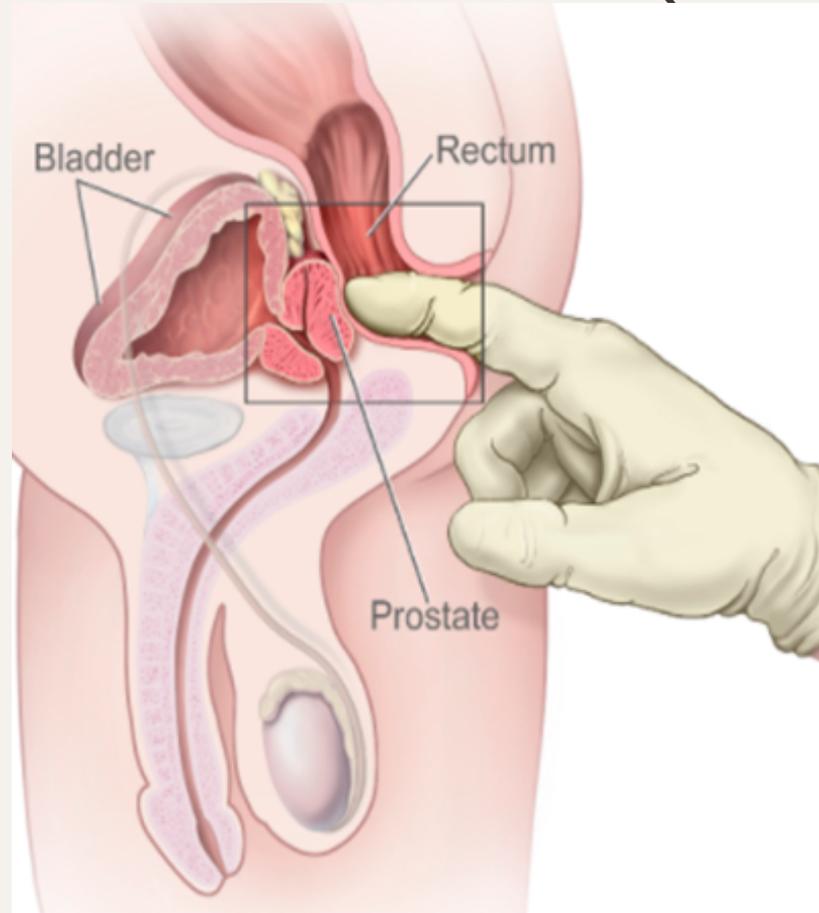
## Inspection:

- Redundant tissue
- Skin tags from old thrombosed external hemorrhoids
- Fissures
- Fistulas
- Signs of infection or abscess formation
- Rectal or hemorrhoidal prolapse, appearing as a bluish perianal mass.



## **Digital rectal exam:**

- Insert gloves and use a lubricant.
- Presence of induration, tenderness and subcutaneous lesions.
- Presence of any distal intrarectal, intra-anal or extraluminal mass.
- Sphincter length, resting tone and voluntary squeeze are assessed.
- Inspection for the presence of mucus, blood or pus and to identify stool color.



## Proctoscopy:

- Performed with the patient in the left lateral position.
- Allows a detailed inspection of the distal rectum and anal canal.
- Minor procedures can also be carried out through this instrument, e.g. treatment of hemorrhoids by injection or banding and biopsy.



## Sigmoidoscopy:

2 types : rigid and flexible

- Although sigmoidoscopy is strictly an examination of the rectum, it should always be carried out even when an anal lesion has been confirmed.

- Rectal pathology, e.g. **colitis** or **carcinoma**, is frequently associated with an anal lesion, e.g. **fissure** or **hemorrhoids**.

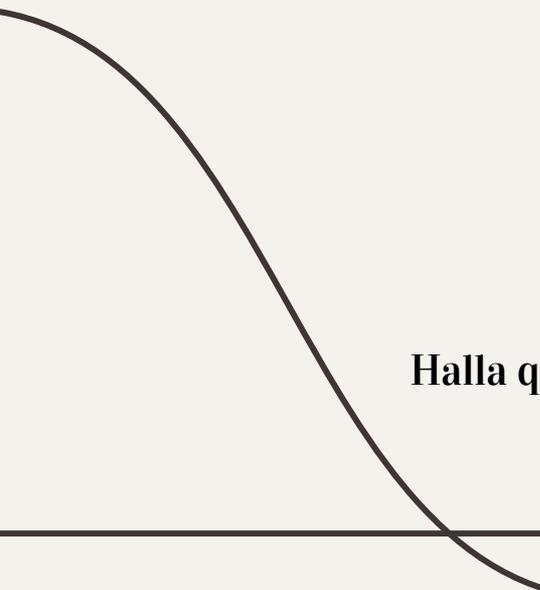


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**02**

**Anorectal Abscess**

**Halla qatawneh**

A decorative curved line starts from the left edge of the slide, curves downwards and to the right, and then curves back up towards the bottom edge.

## **anorectal abscess :**

infection originates most often from an obstructed anal crypt gland, with the resultant pus collecting in the subcutaneous tissue, intersphincteric plane or where various types of anorectal abscesses form.

### **Causes**

#### **Primary :**

- Anal gland infection  
( most common)

#### **secondary :**

- Crohn disease
- Anorectal carcinoma
- Iatrogenic causes
- Lymphogranuloma venereum
- Rectal foreign bodies
- Actinomycosis
- Tuberculosis

---

**The cryptoglandular theory of intersphincteric anal gland infection holds that, upon infection of a gland, pus, which travels along the path of least resistance, may spread (depending on its relation to the longitudinal muscle):**

**(1) □ Perianal (most common)**

**o Abscess beneath the perianal skin**

**□ Ischiorectal: abscess below the levator ani muscle**

**□ Intersphincteric: abscess between the internal and external sphincters**

**□ Supralelevator (least common): abscess above the levator ani muscle**

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**supralevator**

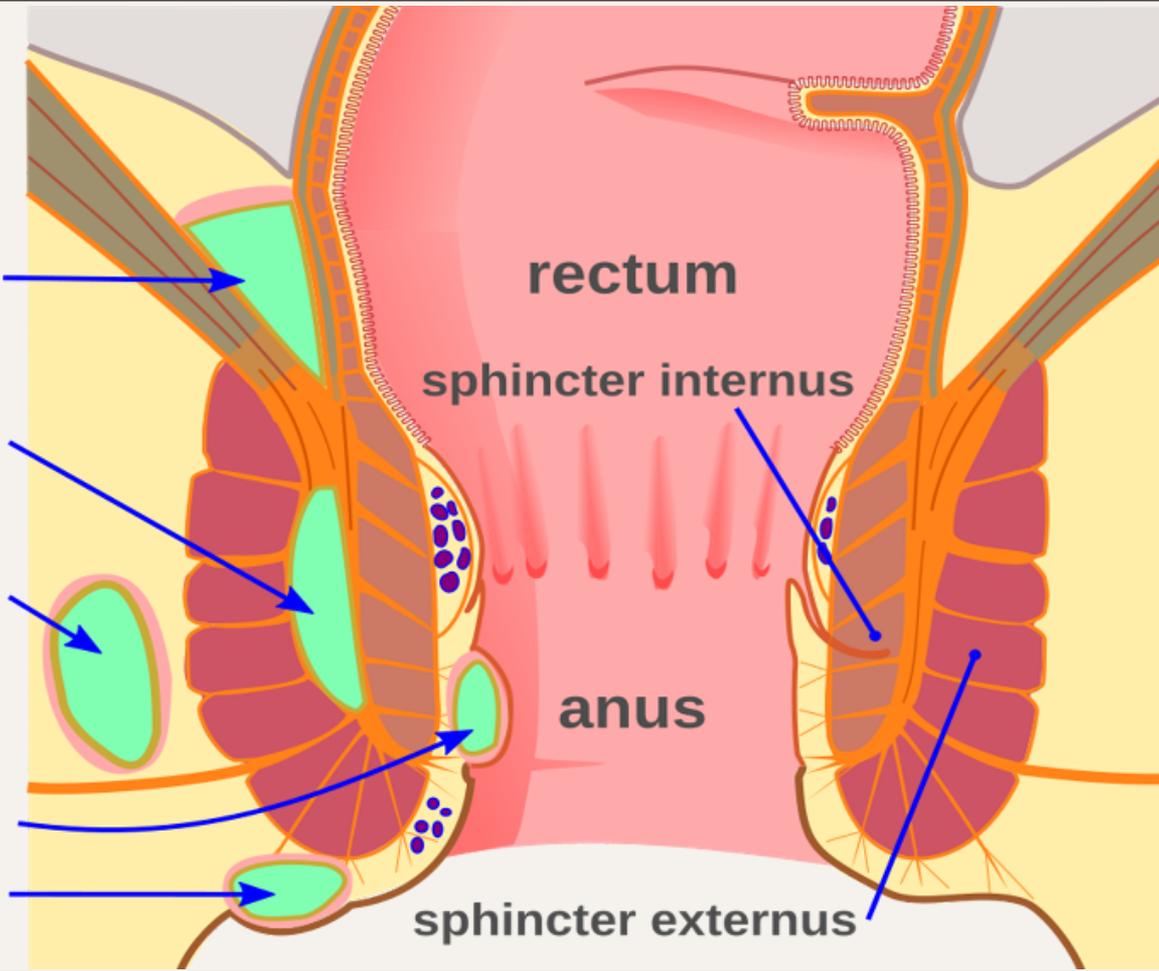
**intersphincteric**

**ischiorectal**

**perianal:**

**submucosal**

**subcutaneous**



**rectum**

**sphincter internus**

**anus**

**sphincter externus**

---

**Sepsis unrelated to anal gland infection may occur at the same or at other sites, including:**

- (1) Submucosal abscess (following hemorrhoidal sclerotherapy, which usually resolve spontaneously)**
  - (2) Muco-cutaneous or marginal abscess (infected hematoma)**
  - (3) Ischio-rectal abscess (foreign body, trauma, deep skin-related infection)**
  - (4) Pelvirectal supralevator abscess originating in pelvic disease.**
-

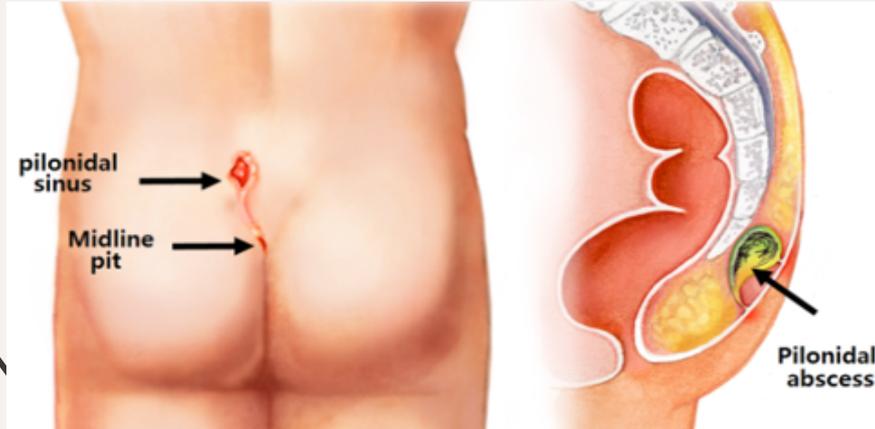
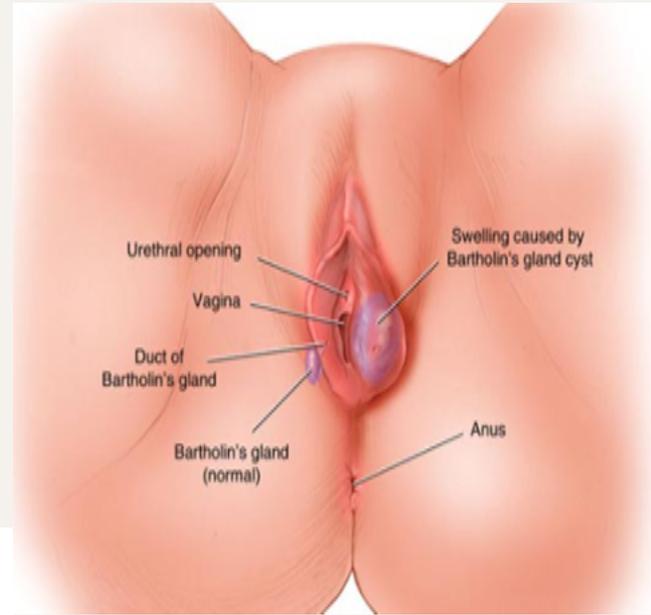
## Presentation:

- A perianal abscess (confined by the terminal extensions of the longitudinal muscle) is usually associated with:
  - A short (2–3 days) history of increasingly severe well-localized pain and a palpable tender lump at the anal margin.
  - Examination reveals an indurated hot tender perianal swelling.
- Patients with infection in the larger fatty-filled space (ischiorectal abscess):
  - Usually present later, with less well-localized symptoms but more constitutional upset and fever.
  - On examination, the affected buttock is diffusely swollen with widespread induration and deep tenderness.
- If sepsis is higher (supralevator abscess):
  - Deep rectal pain, fever and sometimes disturbed micturition may be the only features, with nothing evident on external examination but tender supralevator induration palpable on digital examination above the anorectal junction.

**Differential diagnosis:**

-A pilonidal sinus.

-Bartholin's gland cyst.



## Management:

- For acute anorectal abscess:

- Primarily surgical, including:

- (1) Careful examination under anesthesia.

- (2) Sigmoidoscopy.

- (3) Proctoscopy.

- Incision and adequate drainage of the pus.**

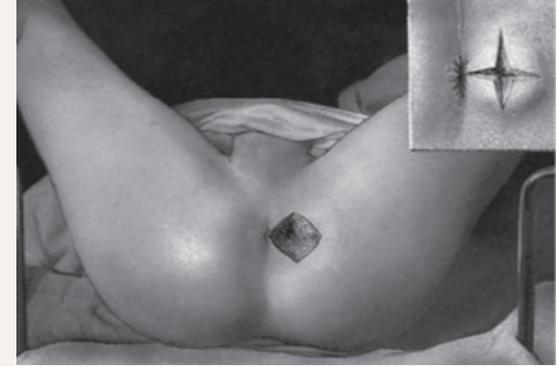
- For perianal and ischiorectal sepsis (with an incidence of 60% and 30%, respectively):

- Drainage is through the perineal skin.

- Usually through a cruciate incision over the most fluctuant point.**

- With excision of the skin edges to deroof the abscess.**

- To allow the healing form inside to outside.**



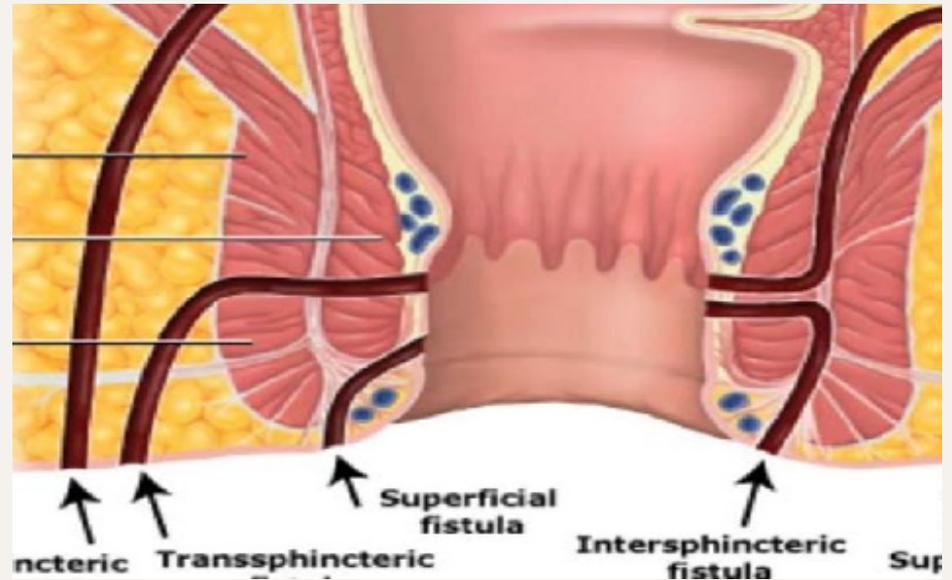
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## Management:

- Pus is sent for microbiological culture (in immunocompromised patient) and tissue from the wall is sent for histological appraisal (suspicion of secondary causes or recurrence of abscess) to exclude specific causes.
  - With a finger in the anorectum to avoid creation of a false opening, the cavity is carefully curetted.
  - prophylactic antibiotics and Therapeutic antibiotics that prescribed if there is surrounding cellulitis and especially in those less resistant to infection, such as diabetics.
-

## Complications:

- Spreading of infection into other tissues.
- Development of a fistula.



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# 03

## Proctalgia Fugax

Halla qatawneh

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It is a condition that is characterized by **attacks of severe pain arising in the rectum , it recurs at irregular intervals and its unrelated to organic disease .**

It may follow straining at stool , sudden explosive bowel action or ejaculation .

It seems to occur more commonly in patients that suffer from anxiety or undue stress and it is also said to affect young doctors

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## Symptoms :

The pain is described as a **cramp like pain in the rectum and often occurs when the patient is in his bed at night and may wake the patient from sleep , and it usually lasts for a few minutes then disappears spontaneously .**

The pain maybe unbearable and it is possibly caused by a **segmental cramp in the pubococcygeus muscle.**

There is no defenitve cure for this condition but is fortunately it is harmless and subsides gradually .

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# Leavator ani syndrome

It is a more chronic form of the disease (Proctalgia Fugax) and can be associated with severe evacuatory dysfunction .

The symptoms of levator ani syndrome include pain high in the rectum that may be:  
irregular and spontaneous

less than 20 minutes in duration

a dull ache

a sense of pressure in the rectum

felt when sitting

relieved when standing or lying down

unrelated to bowel movements

severe enough to interrupt sleep

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# Management of proctalgia fugax

If the patients have **frequent attacks** they may benefit from amitryptiline(TCA).  
Salbutamol inhalers have been suggested as a treatment for **acute attacks**.  
But there is no definitive cure for this condition .

Some surgeons tried severing the puborectalis muscle but this can cause incontinence and should never be done .

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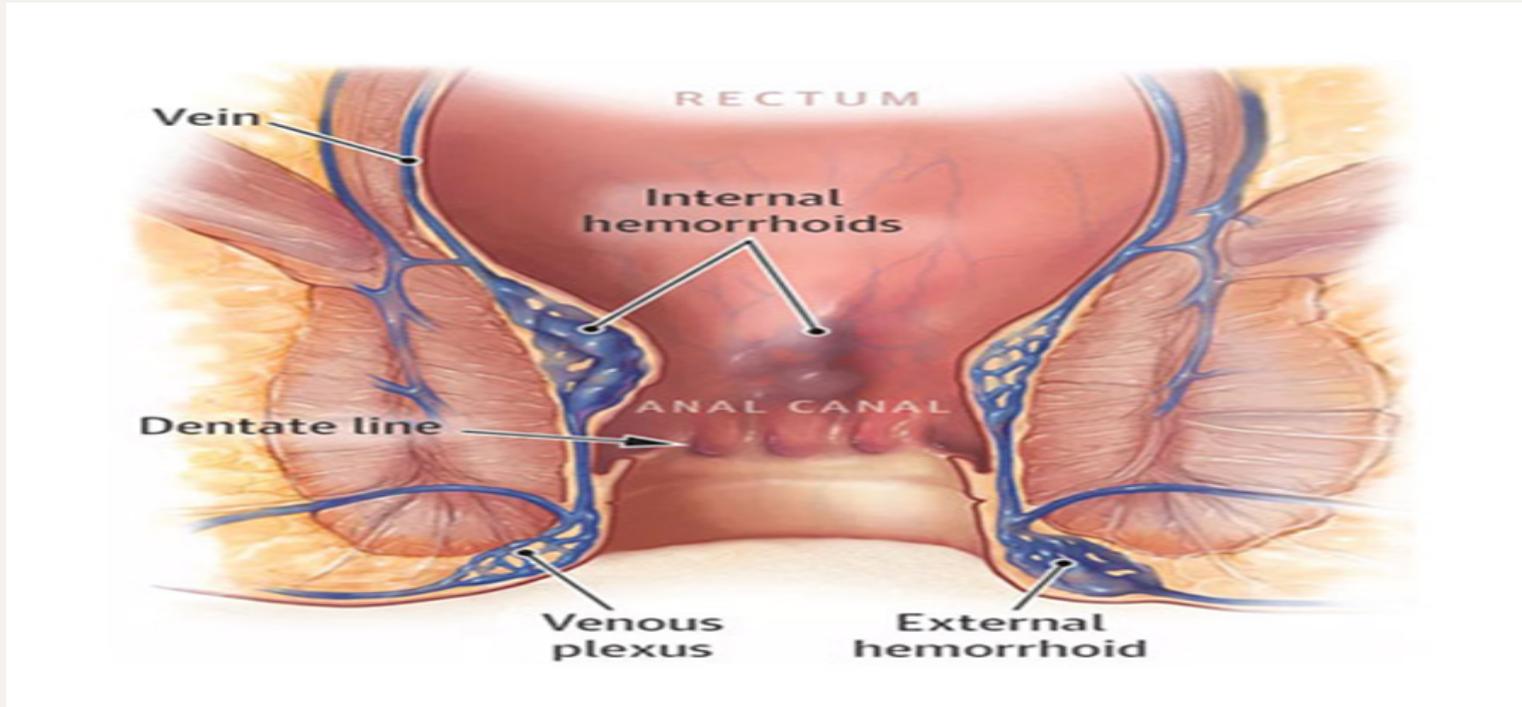
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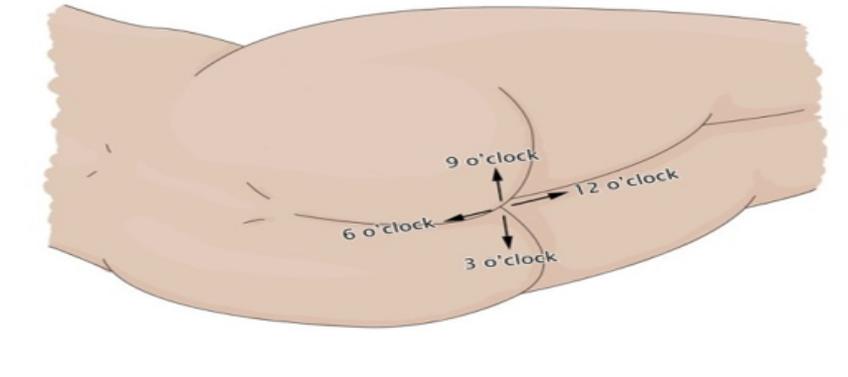
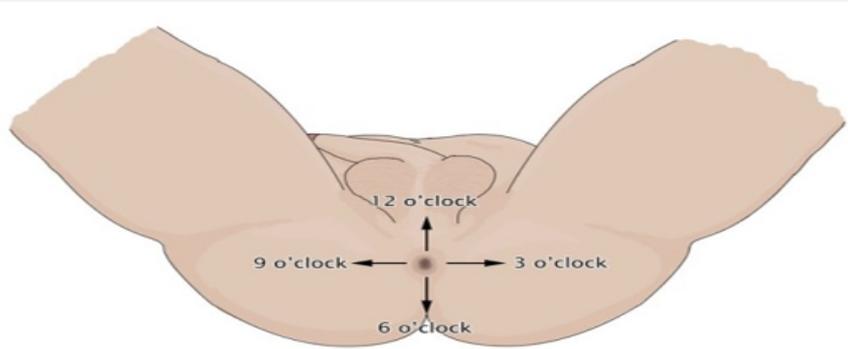
## Complicated hemorrhoids

Yaqout Mriyan

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# Hemorrhoid





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# Hemorrhoid

Normal structure in anorectal part

cushions of submucosal tissue containing venules, arterioles, and smooth-muscle fibers that are in the anal canal (lower rectum)

3, 7 and 11 o'clock positions (with the patient in the lithotomy position).

Hemorrhoid help to control anal continence

---

## Pathology and Pathophysiology

- Hemorrhoids are described as “**Symptomatic anal cushions**”
- Hemorrhoids generally cause symptoms when they become **enlarged, inflamed, thrombosed, or prolapsed**.
- Most symptoms arise from enlarged **internal** hemorrhoids.
- Abnormal swelling of the anal cushions -> dilatation and engorgement of the arteriovenous plexuses -> stretching of the suspensory muscles -> prolapse.
- The weakening of the suspensory muscles of the rectum results in **prolapse and fecal incontinence**.
- The engorged anal mucosa is easily traumatized, leading to rectal bleeding that is typically **bright red** due to high blood oxygen content within the arteriovenous anastomosis.
- Prolapse leads to soiling and mucus discharge (triggering pruritus) and predisposes to incarceration and strangulation.

---

## **Epidemiology:**

**The prevalence of hemorrhoids increases with age.**

- **Aging causes weakening of the support structures, which facilitates prolapse.**

- **The supporting structures show a higher proportion of collagen than muscle fibers and are fragmented and disorganized.**

**No known sex preference exists.**

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## etiology

**Straining and constipation.**

**Pregnancy.**

**Obesity.**

**Prolonged sitting.**

**Portal hypertension and anorectal varices.**

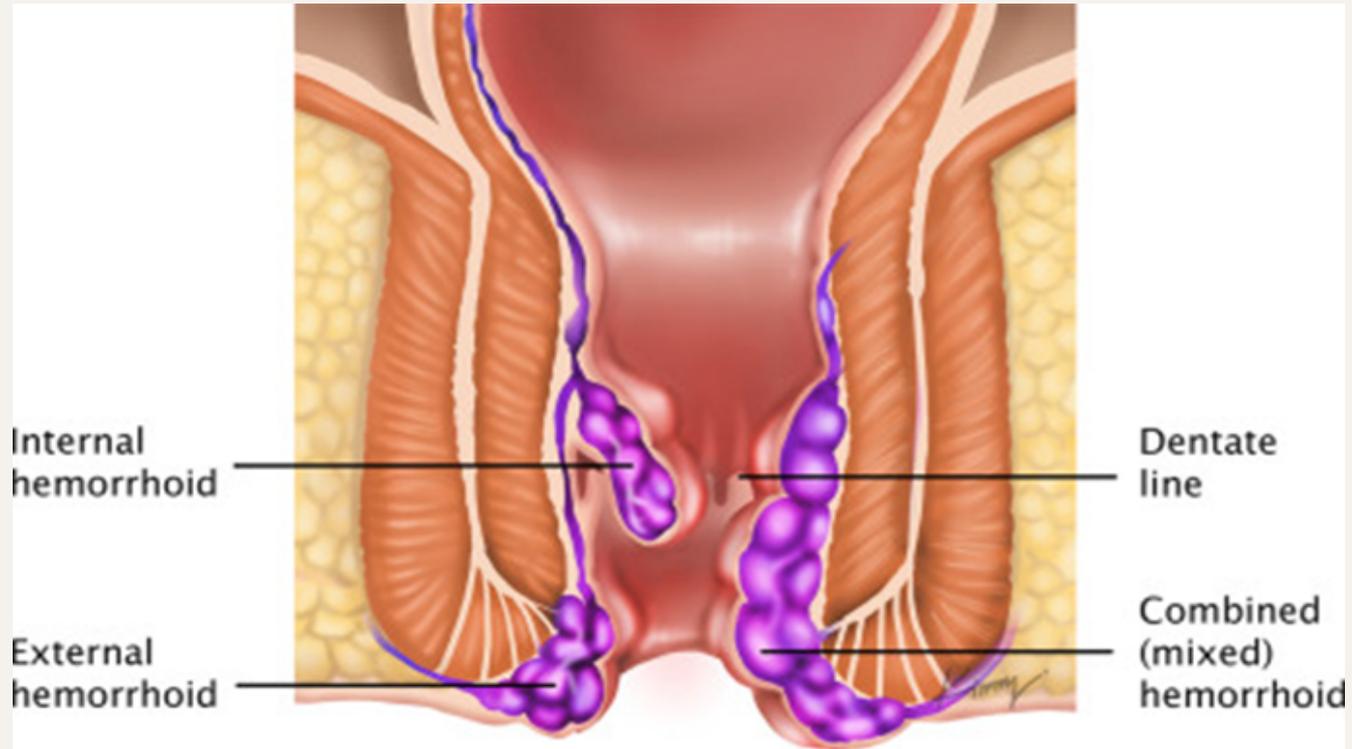
**Chronic diarrhea**

**Familial**

**Heavy weight-lifting**

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## Internal hemorrhoids



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# Internal Hemorrhoids

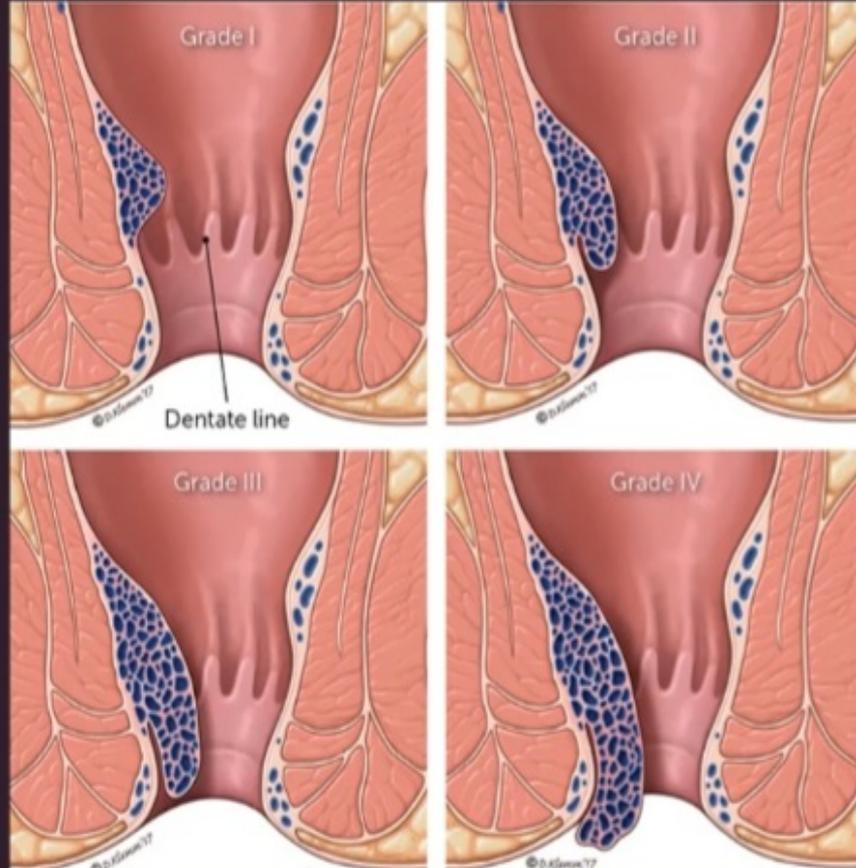
Internal hemorrhoids are not painful until complicated

- Internal hemorrhoids most commonly cause **painless bleeding** with bowel movements
    - It can produce perianal pain by prolapsing and causing spasm of the sphincter complex around the hemorrhoids.
  - This spasm results in discomfort while the prolapsed hemorrhoids are exposed.
  - Can also cause acute pain when incarcerated and strangulated.
  - Strangulation with necrosis may cause more deep discomfort.
  - When these catastrophic events occur, the sphincter spasm often causes concomitant external thrombosis.
  - External thrombosis causes acute cutaneous pain.
-

# Grading of internal hemorrhoids

→ Internal hemorrhoids are graded according to the extent of prolapse:

- First degree:  
Bleed only, no prolapse
- Second degree:  
prolapse but reduce spontaneously
- Third degree:  
prolapse and have to be manually reduced
- Fourth degree:  
permanently prolapsed.



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# External hemorrhoids

- Cause symptoms (server sudden pain ) by acute thrombosis of the underlying external hemorrhoidal vein.
  - 
  - appears like painful subcutaneous swelling in anal margin
  - Thrombosed external hemorrhoid >> we use the same management of fissure (sets bath / nitroglycerin / analgesics
  - if the pain continues over 3 days << local evacuation (thrombectomy)
  - If Untreated it may resolve, suppurate, fibrose and give rise to a cutaneous tag, burst and the clot ejection, or continue bleeding. In most cases, resolution or fibrosis occurs. This condition has been called 'a 5-day, painful, self-curing lesion'
  - External hemorrhoids can also cause hygiene difficulties, with the excess, redundant skin left after an acute thrombosis (skin tags)  
Can mechanically interfere with cleansing.
-

# Clinical features and Symptoms

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## (1) **Bleeding per rectum:**

- The most common and the earliest complaint
- Bright red+ painless + at the end of defecation as drops that are separate of stool.

## (2) **Prolapse**

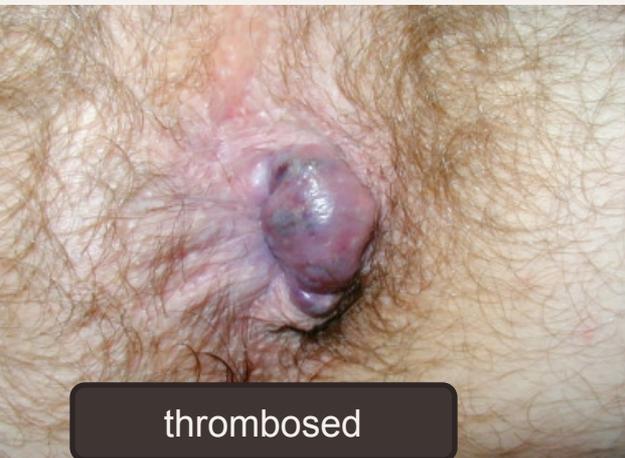
- The cushions descend below the dentate line.
- Early felt as heaviness then according to the clinical degree.

## (3) **Pruritus and anal discharges.(fecal incontinence + poor hygiene )**

(4) **Pain: ONLY IF COMPLICATED.**( if there is pain with bleeding and the hemorrhoids noncomplicated we should think bout another diagnosis

(5) **Tender palpable perianal lesion :** Can form adjacent to the anal canal on the anal margin when there is acute thrombosis.

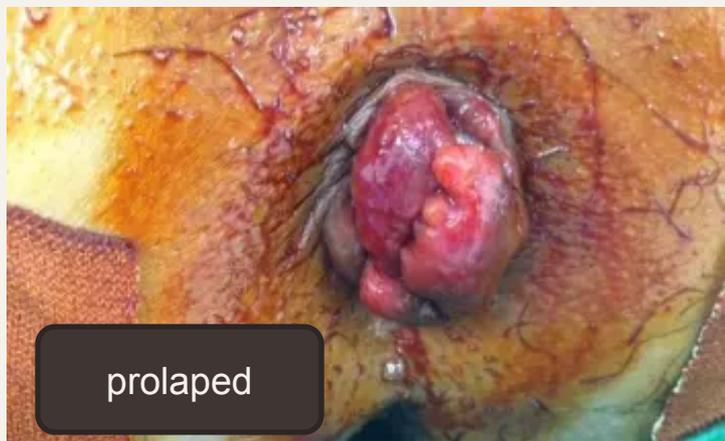
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thrombosed



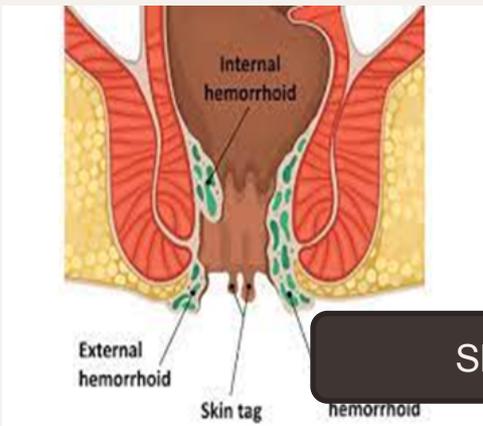
necrotic



prolapsed



ulcerated



Skin tags



# Investigations:

**Anoscopic examination** :The most specific and conclusive diagnostic test for hemorrhoids.

**Colonscopy/ flexible sigmoidoscopy** : Used to exclude serious pathology such as inflammatory bowel disease or cancer. In the presence of suspicious symptoms, such as altered bowel habit (diarrhea and/or constipation), abdominal pain, weight loss, iron-deficiency anemia, or passage of blood clots and/or mucus.

**CBC** : Ordered only if there is concern that the patient has experienced significant prolonged rectal bleeding and signs of anemia are present.

**Stool for occult blood** : Unnecessary unless no significant hemorrhoidal tissue is seen on examination; further evaluation deemed unnecessary if the results are negative.

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# Managements

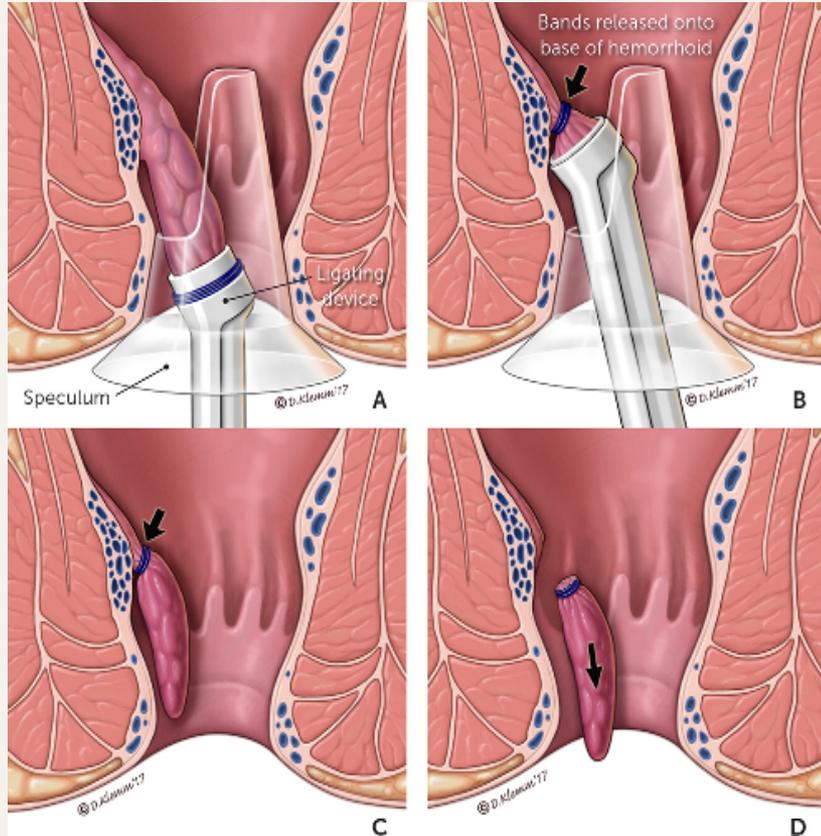
- Patients with symptomatic hemorrhoids initially be treated with Conservative treatment including:

high fiber diet ,laxatives and suppositories., sitz bath in warm water, stool softeners and bulking agents to ease the defecatory act, avoid straining , creams.

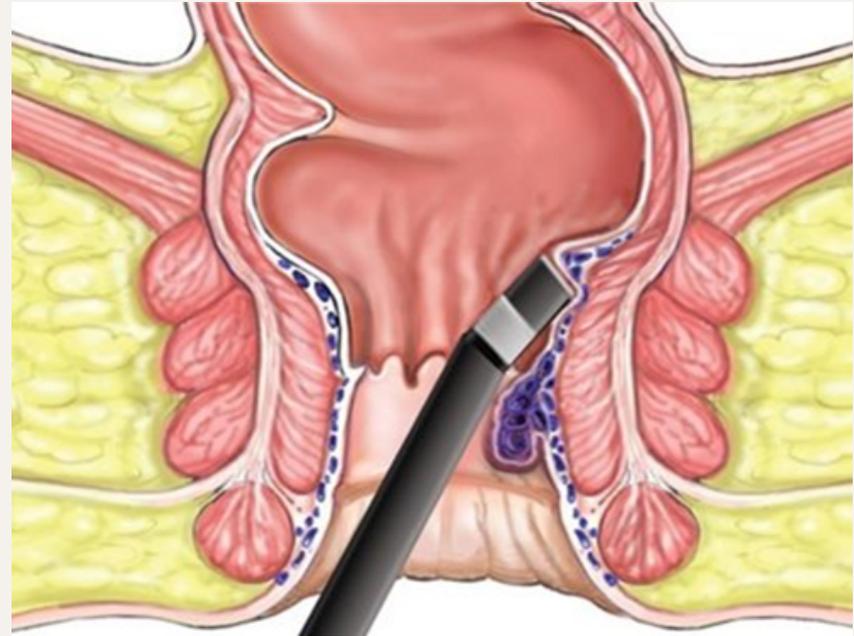
**Rubber band ligation** (For more bulky piles) or **sclerotherapy** or **infrared photocoagulation** or haemorrhoid arterial ligation or stapled haemorrhoidopexy .

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# Banding



# Infrared photocoagulation



# Stapled hemorrhoidectomy:

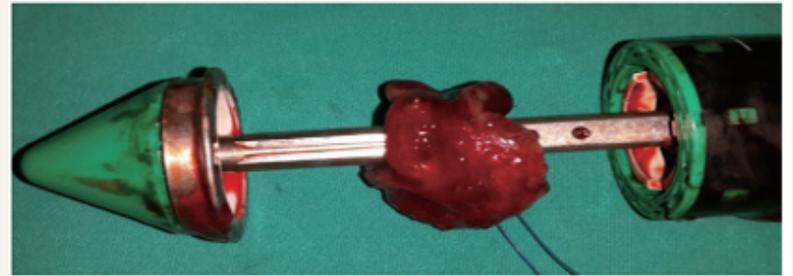
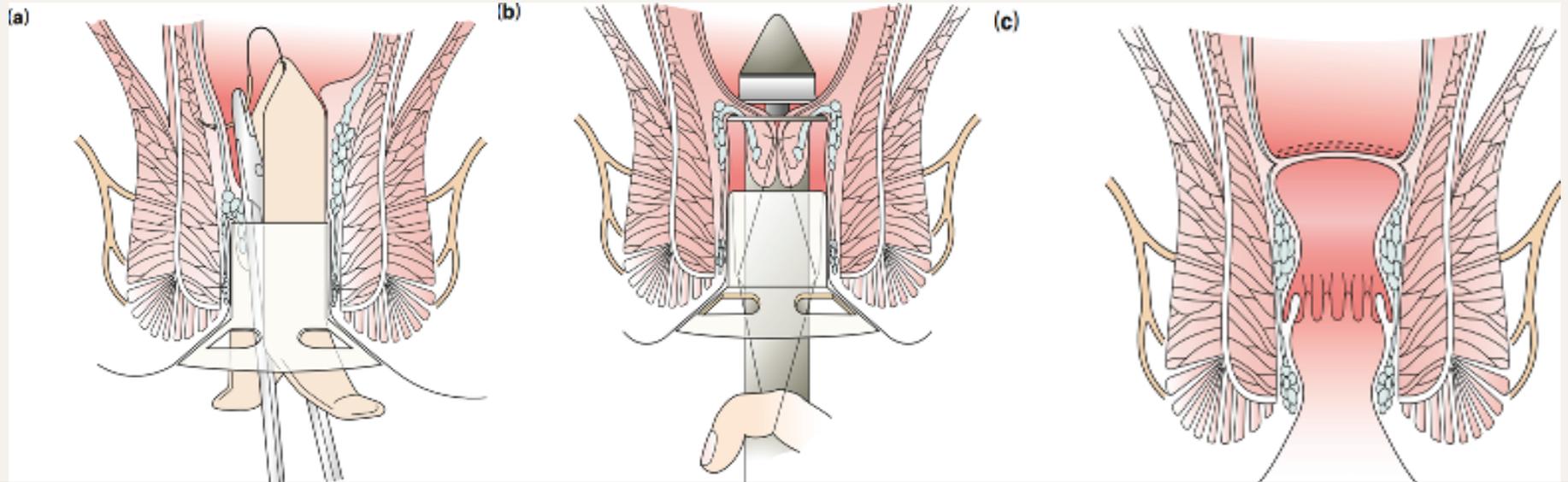


Figure 3 Hemorrhoidal prolapse is excised as a ring or 'donut' of tissue above the hemorrhoidal cushions and immediate re-anastomosis of the mucosa is performed.



- 
- **Grade I hemorrhoids:** are treated with conservative medical therapy.
  - **Grade II or III hemorrhoids** are initially treated with nonsurgical procedures.
  - **Very symptomatic grade III and grade IV hemorrhoids** are best treated with surgical hemorrhoidectomy.
  - **Treatment of grade IV internal hemorrhoids or any incarcerated or gangrenous tissue** requires prompt surgical consultation.
-

## Indications for Hemorrhoidectomy:

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- Third- and fourth-degree hemorrhoids.
- Second-degree hemorrhoids that have not been cured by non-operative treatments.
- Fibrosed hemorrhoids.
- Interno-external hemorrhoids when the external hemorrhoid is well defined.
- The other strong indication for surgery is hemorrhoidal bleeding sufficient to cause anemia.

## Complications of hemorrhoidectomy :

Early :

- .1 Urine Retention
2. Pain

Late :

- .3 Incontinence
- .4 Stricture ) stenosis(

# Complications of hemorrhoids

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**Strangulation** : Prolapsing haemorrhoidal tissue can become incarcerated and be unable to be reduced into the anal canal, causing severe pain.

-The treatment for incarcerated haemorrhoids is traditionally urgent surgical haemorrhoidectomy.

**Thrombosis**: Acute thrombosis of a haemorrhoid manifests as the sudden onset of perianal pain and the appearance of a tender nodule adjacent to the anal canal. The thrombosis often follows a period of vigorous activity.

- The treatment of an acute thrombosis involves the relief of pain, which is the predominant symptom. Non-surgical treatment consists of warm tub soaks. Mild oral analgesia and stool softeners can be offered. The thrombus will be gradually resorbed over 1 to 2 weeks.

Surgical de-roofing or excision can be considered when symptoms are severe

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**Anal stenosis** : Increased incidence with extensive, circumferential excision. Severe long-standing stenosis is rare.

- Minor fibrotic stenosis is treated by dilation in outpatient clinics followed by self-dilation. Significant stenosis will require surgical correction.
  
  - Ulceration and gangrene
  - Portal pyaemia
  - Animea
-

---

# Differential Diagnosis of Hemorrhoids

- Inflammatory bowel disease (UC & CD)
- Condyloma Acuminatum (Genital Warts)
- Coagulopathy
- Anal fissure
- Anal fistula
- Viral or bacterial skin infection
- Acute Proctitis

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# 05

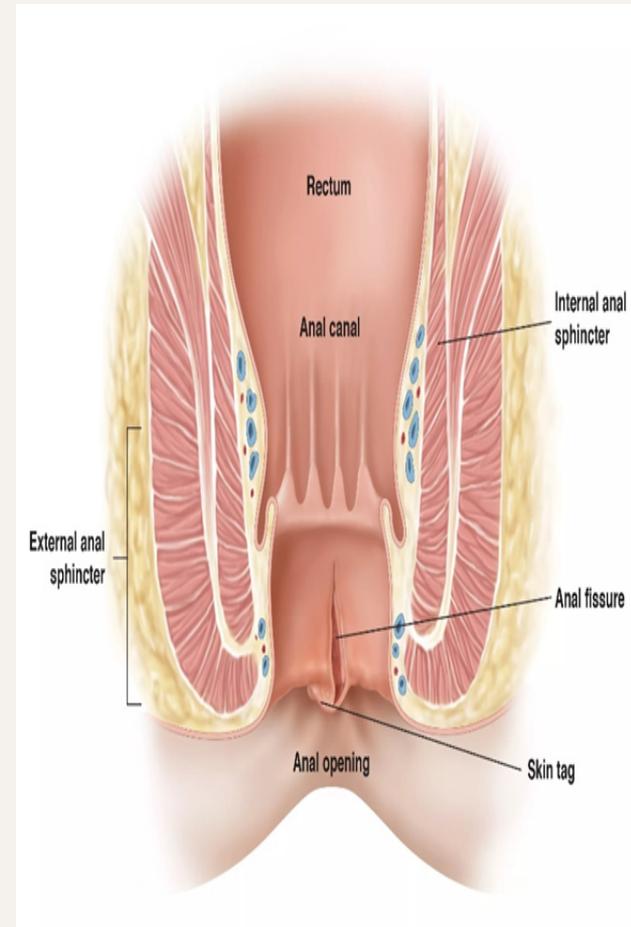
## Anal Fissure

SHAHED AWAD AL-QATAWNEH

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# Anal fissure

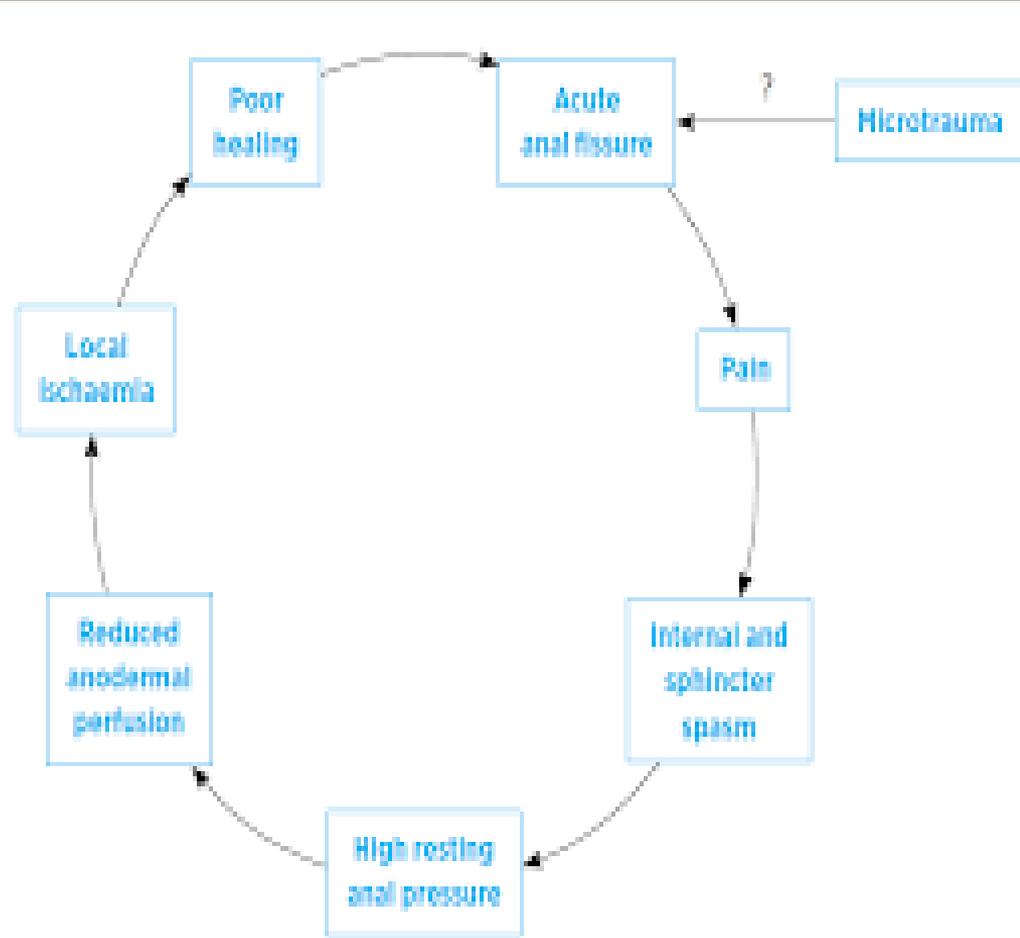
- Synonym: fissure-in-ano.
- Is a longitudinal split in the anoderm of the distal anal canal, which extends from the anal verge approximal towards, but not beyond, the dentate line.
- Classically, **the cause of an anal fissures arises from the trauma, caused by the strained evacuation of a hard stool or, less commonly, from the repeated passage of diarrhea.**



- 
- The most common part of the rectum that being affected with fissure is **the posterior** **midline**.
  - The reason of that is not completely clear, but recent studies show that it's maybe due to **exaggerated shearing forces acting at that site** (due to defecation) **with less elastic anoderm** endowed with increased density of longitudinal muscle extensions in that region of anal circumference.
  - **Anterior anal fissure** is much more common in women after vaginal delivery → because it **causes** trauma to the anal canal and that in order **causes** tearing of it.
-

There are some **factors** play a role in the perpetuation and chronicity of the case, such as:

- (1) Repeated trauma, like frequent anal intercourse.
- (2) Vascular malformations that result in insufficiency of blood supply to the anus.
- (3) The posterior commissure is **less well perfused** than the remainder of the anal circumference



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**Anal  
fissure**

```
graph LR; A[Anal fissure] --- B[Acute anal fissure]; A --- C[Chronic anal fissure]
```

**Acute anal  
fissure**

**Chronic  
anal  
fissure**

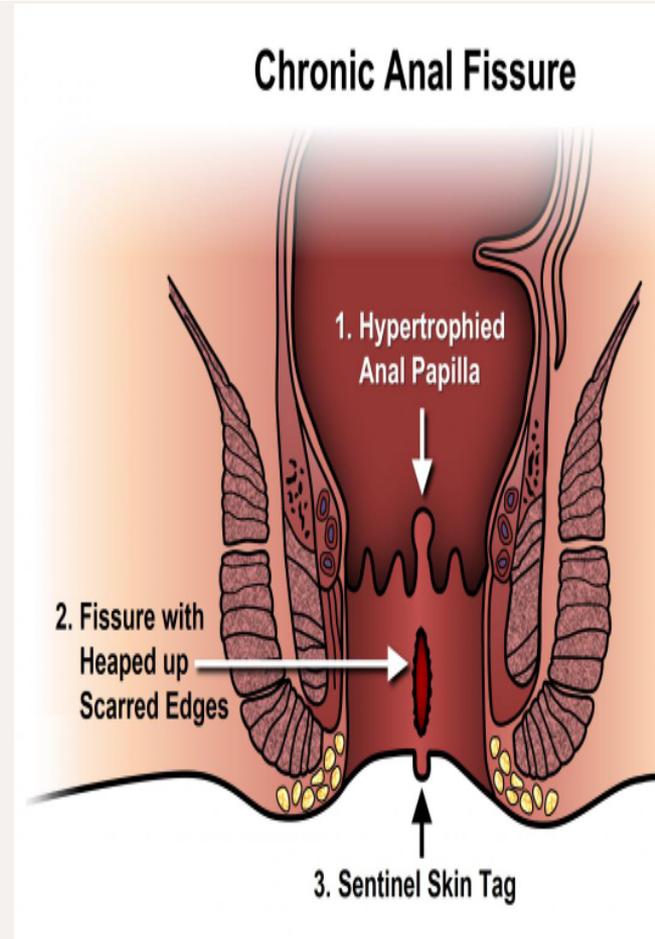
# Acute anal fissure

- Heals within 4-6 weeks
- **Characterized by** severe anal pain associated with defecation.
- This usually resolves spontaneously, only to recur at the next evacuation, as well as the passage of fresh blood, normally noticed on the tissue after wiping.



# Chronic anal fissure

- Lasts longer than 6 weeks
- **Characterized by** a hypertrophied anal papilla internally and a sentinel tag externally (both consequent upon attempts a healing and breakdown), between which lies the slightly indurated anal ulcer overlying the fibers of the internal sphincter. **sentinel tag: small external lump associated with the tear**
- Patients may also complain of itching secondary to irritation from the sentinel tag, **discharge** from the ulcer or discharge from an associated intersphincteric fistula, which has arisen through infection penetrating via the fissure base.





Chronic fissure displaying several changes of chronicity. From Wienert V, Raulf F, Mlitz H. Anal fissure. Springer, 2017.



THE ANUS AND RECTUM CLINIC

## HYPERTROPHIED ANAL PAPANILLAE

IF FISSURE IS IGNORED IT CAN LEAD TO SUCH COMPLICATION

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□ **Epidemiology:**

- It can affect all age groups, most commonly young adults.
- Men and women are affected equally.
- Anterior midline fissure account 10 percent of cases in women. on the other hand, account 1 percent of cases on men.

A fissure sited elsewhere around the anal circumference or with atypical features should raise the suspicion of a specific etiology, and should be examined under anesthesia, with biopsy and culture to exclude Crohn's disease, tuberculosis, sexually transmitted or HIV-related ulcers (syphilis, Chlamydia, chancroid, lymphogranuloma venereum, HSV, cytomegalovirus, Kaposi's sarcoma, B-cell lymphoma) and squamous cell carcinoma.

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# Treatment



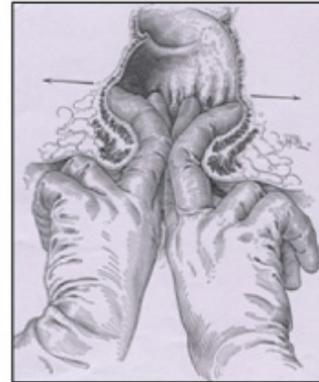
**Aim of treatment is to obtain complete relaxation of internal sphincter** ---> the fissure will heal slowly.

## □ **Conservative treatment:**

- **The addition of fiber to the diet to bulk up the stool, stool softeners and adequate water intake are simple and helpful measures.**
  - **Warm baths and topical local anesthetic agents relieve pain;** however, providing patients with anal dilators is usually associated with low compliance and consequently little effect
  - **topical application of pharmacological agents that relax the internal sphincter, most commonly **nitric oxide donors (Scholefield)**; by reducing spasm, pain is relieved, and increased vascular perfusion promotes healing.**
- Such agents include glyceryl trinitrate (GTN) 0.2 per cent applied four times per day to the anal margin (although this may cause headaches) and diltiazem 2 per cent.

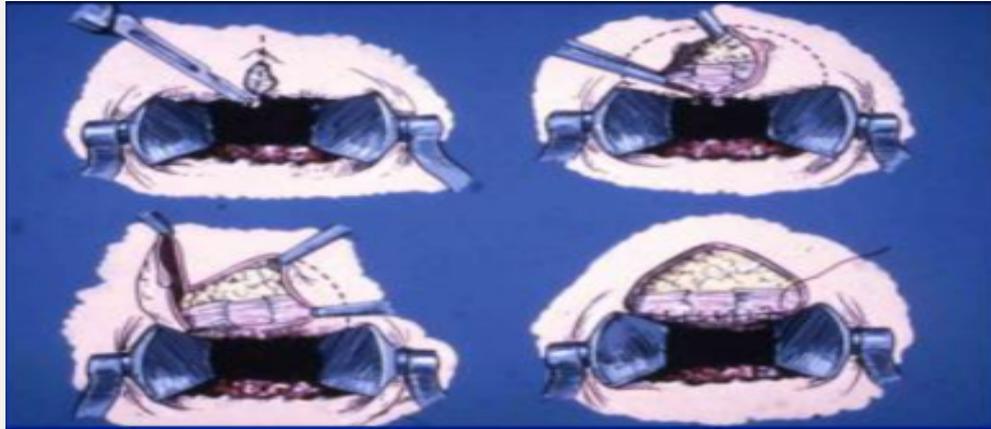
# Surgical Treatment

- ✓ **forceful manual (four- or eight-digit) sphincter dilatation:**
  - Was used to reduce sphincter tone
  - potential disruption at multiple sites of the internal (and even external) sphincter.
  - **The risk of incontinence following this procedure has now made it unpopular**



✓ **Posterior division of the exposed fibers of the internal sphincter in the fissure base:**

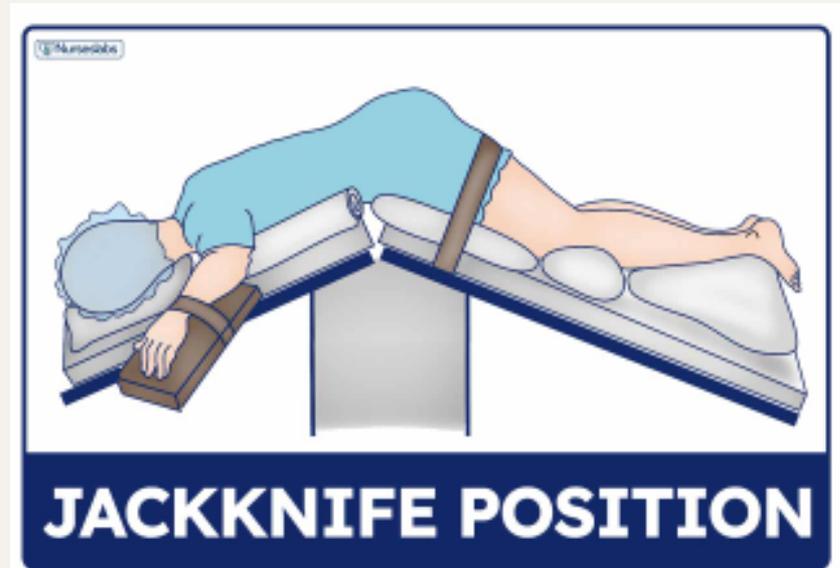
- It may be indicated if there is an associated intersphincteric fistula.
- Associated with prolonged healing
- **Passive anal leakage** (due to keyhole gutter deformity)



\* A keyhole defect may refer to a groove in the anal canal wall, which can occur after posterior midline fissurectomy or fistulotomy and it's associated with minor degrees of fecal incontinence, allowing seepage of liquid stool or mucus.

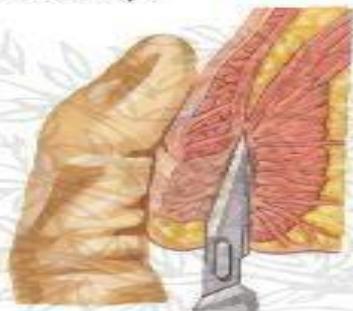
✓ **Lateral anal sphincterotomy:**

- In this operation, the internal sphincter is divided away from the fissure itself – usually either in the right or the left lateral positions (Notaras).
- The procedure can be carried out using an open or a closed method, under local, regional or general anesthesia, and with the patient in the lithotomy or prone jackknife position.



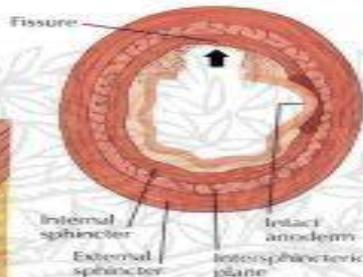
## Lateral Internal Sphincterotomy

### Closed technique



Blade inserted in intersphincteric groove and passed cephalad in intersphincteric plane to level of dentate line

Blade then moved medially, dividing anterior 1/3 to 1/2 of internal sphincter



Internal sphincter divided; external sphincter, anoderm, and longitudinal muscle remain intact

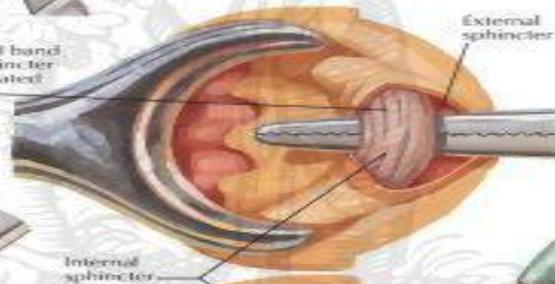
### Open technique



Skin incision made external to anal verge

Hypertrophied band of internal sphincter lifted and elevated into incision

External sphincter



External sphincter

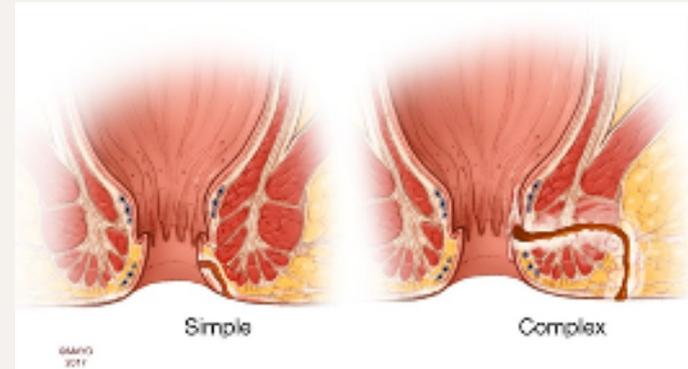
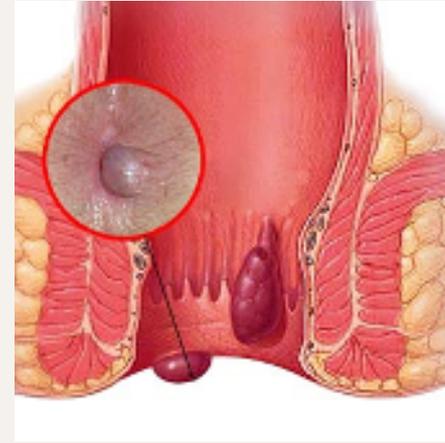
Internal sphincter

Internal sphincter divided; wound usually left open for drainage



# Complications:

- Hemorrhage
- Hematoma
- Bruises
- Perianal fistula
- Abscess formation
- Incontinence, which may affect up to 30 per cent of patients, particularly women, who have weaker, shorter sphincter complexes



✓ **Anal advancement flap:**

- After excision of the edges of the fissure and, if necessary, its base overlying the internal sphincter, an inverted house-shaped flap of perianal skin is carefully mobilized on its blood supply and advanced without tension to cover the fissure, and then sutured with interrupted absorbable sutures.
- The patient is maintained on stool softeners and bulking agents postoperatively, and usually also on topical sphincter relaxants.



✓ **Botox injection therapy:**

- **Botulinum toxin has been used to treat acute and chronic anal fissures.**
- **It is injected directly into the internal anal sphincter, in effect performing a relaxation of rectal muscles.**
- **The effect lasts about 3 months, until nerve endings regenerate.**
- **This 3-month period may allow acute fissures (and sometimes chronic fissures) to heal and symptoms to resolve.**
- **If botulinum toxin injection provides initial relief of symptoms but there is a recurrence after 3 months, the patient may benefit from surgical sphincterotomy.**



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# 06

## Anal Tumors

**Anal malignancy** is rare and accounts for less than 2 per cent of all large bowel cancers.

The crude incidence rate is 0.65 per 100 000.

Those arising below the dentate line are usually **squamous**, whereas those above are variously termed basaloid, cloacogenic or transitional.

### **Squamous cell carcinoma (epidermoid carcinoma) :**

- Although rare, the incidence of anal squamous cell carcinoma (SCC) is rising, with a direct **association with HPV infection**, (especially subtypes 16, 18, 31 or 33) in 70–90 per cent of cases.

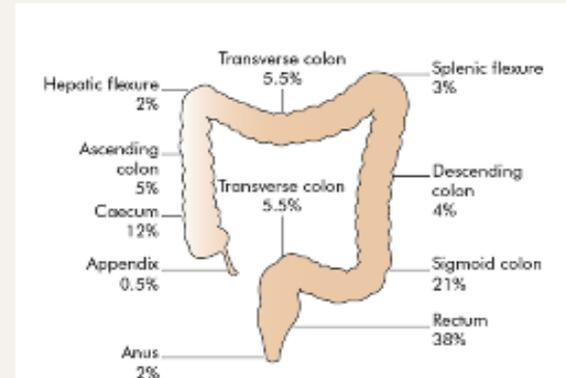


Figure 69.23 Distribution of colorectal cancer by site.

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Infection with HPV is **the single greatest risk factor** for the development of anal cancer.

Other risk factors include:

- Age >55 years
- Receptive anal intercourse
- Sexually transmitted disease (STD)
- Immunosuppression (as in transplant recipients or individuals with HIV infection)
- Pelvic irradiation
- Smoking

At-risk populations should be screened carefully, with early referral to colorectal surgeons.

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**Signs and symptoms of anal cancer include:**

- Pain and bleeding per rectum (most common)
  - Peri-anal mass/lump
  - Peri-anal pain or pressure
  - Itching or discharge from the anus
  - A change in bowel habits
- Advanced tumors may cause fecal incontinence by invasion of the sphincters and, in women, anterior extension may result in anovaginal fistulation.



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## Staging:

- Initial staging involves a **clinical examination and biopsy of the primary tumor, as well as examination of inguinal nodes.**
- **Local staging is by MRI scanning and CT is used to assess lungs and abdomen for metastatic spread.** Positron emission tomography (PET) CT may help in equivocal inguinal node assessment.

## Management:

- Treatment is aimed at local control.
  - Primary treatment is by chemoradiotherapy (combined modality therapy (CMT))
  - Small marginal tumors are still best treated by local excision.
  - Radical surgery is indicated in those with persistent or recurrent disease following CMT.
-

## Other anal malignancies:

### - Adenocarcinoma:

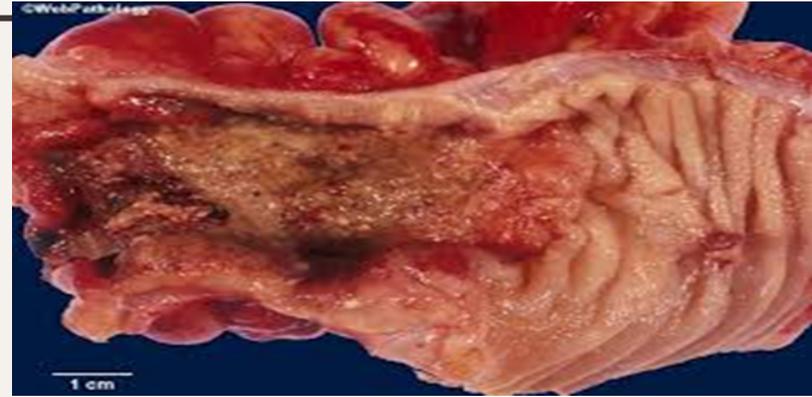
It has three subtypes:

- Rectal type (most common)
- Anal glandular epithelium
- Anorectal fistula type

Rectal-type adenocarcinoma arises in the upper anus and is not distinguishable from adenocarcinoma of the lower rectum , so it is treated according to rectal cancer protocols. APR abdominal perianal resection is the most definitive surgical therapy for it.

### Treatment:

- Surgery with or without chemotherapy or radiation therapy.
- Systemic chemotherapy with or without targeted therapy (angiogenesis inhibitor).
- Systemic chemotherapy with or without immunotherapy (immune checkpoint inhibitor therapy).



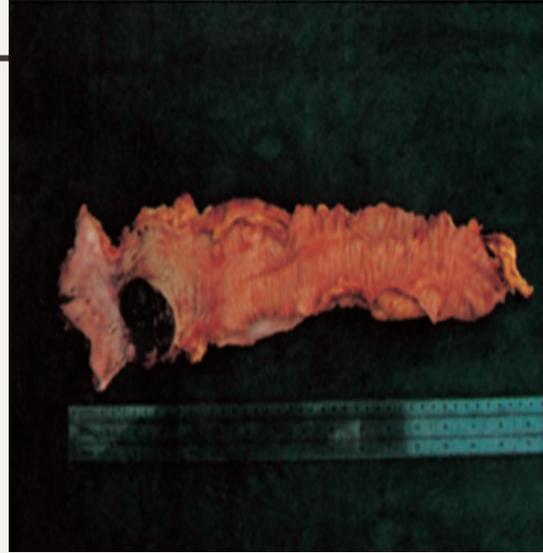
## Notes:

The prognosis, irrespective of treatment, is extremely poor.

Melanocytes can be found in the transitional zone of the anal canal.

Malignant melanoma of the anus is very rare and usually presents as a **bluish-black soft mass** that may mimic a thrombosed external pile. **Surgical excision is the only treatment**, and it offers minimal survival benefit.

Malignant melanoma of the anal canal



## Summary box 73.16

### Anal cancer

- Uncommon tumour, which is usually a squamous cell carcinoma
- Associated with human papilloma virus (HPV)
- More prevalent in patients with HIV infection
- May affect the anal verge or anal canal
- Lymphatic spread is to the inguinal lymph nodes
- Treatment is by chemoradiotherapy in the first instance
- Major ablative surgery is required if the above fails

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# Thank you

**Resources:**

- Bailey and Love's Short Practice of Surgery.
  - Schwartz's Principles of Surgery.
  - Medscape.com
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