



# 432 Surgery Team

## 25 Anorectal conditions



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COLOR GUIDE: • Females' Notes • Males' Notes • Important • Additional

# Objectives

NOT GEVIN 😞

# ANORECTAL CONDITIONS

## OVERVIEW: ANATOMY AND PHYSIOLOGY

### ❖ **Site:**

The anal canal is approximately 3-4 cm long and extends from the anorectal junction (dentate/pectinate line) to the anal verge

### ❖ **Blood supply:**

- a. The superior rectal (a branch from the inferior mesenteric artery)
- b. The middle rectal (a branch from the internal iliac artery)
- c. The inferior rectal artery (a branch from the internal pudendal artery)

### ❖ **Venous drainage:**

- a. **The superior rectal** (to the portal system by the inferior mesenteric vein)
- b. **The middle and the inferior rectal** veins (to the systemic circulation by the internal iliac and pudendal vein)

❖ The **physiology** of anal continence is the result of complex interactions between sensory, involuntary and voluntary motor functions

❖ **The dentate line** is the transitional zone from columnar rectal epithelium and the squamous anal epithelium:

- **Above the line:** endodermal origin, lined by columnar rectal epithelium, no sensation of pain except in ischemic cases "visceral sensory nerves", it's only sensitive to stretch.

- **Below the line:** anodermal origin, lined by squamous anal epithelium, sensitive to pain, richly innervated by somatic sensory nerves.

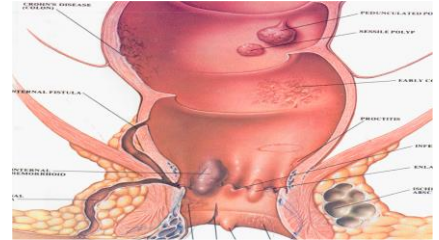
○ **Pathologic conditions that arise below the level of the dentate line cause severe pain.**

⊙ **Internal anal sphincter** → involuntary sphincter of smooth muscle, autonomic innervation, controls gas and liquid stool.

⊙ **External anal sphincter** → striated voluntary muscle, controls solid stool

# 1. ANORECTAL ABSCESSSES AND FISTULA-IN-ANO

- Both abscess and fistula-in-ano can be considered simultaneously
- The abscess is an **acute** manifestation, & the fistula is a **chronic** condition
- Most surgeons' reputations reportedly have been impugned because of problems with fistula operations than from other operative procedure



## ETIOLOGY

NON-SPECIFIC	SPECIFIC
<p>✓ <b>Crypto-glandular in origin 90%</b></p> <ul style="list-style-type: none"> <li>- <b>Crypto-glandular hypothesis</b> states that infection of anal glands associated with anal crypts is the primary cause of anal fistula &amp; abscess</li> <li>▪ In the dentate line there are about 9-15 glands <b>drain inside</b> the crypt, which secrete through ducts.</li> </ul> <p>In case of obstruction “<b>obstruction caused by any inflammation like IBD or hard stool</b>” → accumulation of secretion &amp; inflammation → causing abscess and anal fistula</p> <ul style="list-style-type: none"> <li>• An anal fistula is an abnormal connection between the epithelialized surface of the anal canal and (usually) the perianal skin</li> </ul> <ul style="list-style-type: none"> <li>- <b>Anal fistulae:</b> originate from the anal glands, which are located between the two layers of the anal sphincters, which drain into the anal canal. If the outlet of these glands becomes blocked, an abscess can form which eventually point to the skin surface. The tract formed by this process is the fistula.</li> </ul>	<p><b>10% from:</b></p> <ul style="list-style-type: none"> <li>✓ <b>Crohn’s disease (most important; very tough to treat)</b></li> <li>✓ <b>Ulcerative colitis</b></li> <li>✓ <b>TB</b></li> <li>✓ <b>Actinomycosis</b></li> <li>✓ <b>Carcinoma</b></li> <li>✓ <b>Trauma</b></li> <li>✓ <b>Radiation</b></li> <li>✓ <b>Lymphoma, leukemia</b></li> <li>✓ <b>Foreign body</b></li> <li>✓ <b>Pelvic inflammation</b></li> </ul>



## CLINICAL PRESENTATION

- Abscess (acute) →
  - Patient presents with constant throbbing perianal pain and systemic manifestations as fever if it becomes infected
- Anal fistulae (chronic) →
  - Patient most likely has a history of abscess, pus discharge (bloody/purulent), pruritus ani, perianal discomfort

## DIAGNOSIS

- Done by examination, either in an outpatient setting or under anesthesia (EUA: examination under anesthesia)

## CLASSIFICATION OF ABSCESES (ACUTE PHASE)

1. **Ischiorectal/ischioanal (most common)**
2. **Intersphincteric abscess**
3. **Perianal abscess**
4. **Supralelevator/pelvirectal abscess:** (rare, difficult to diagnosis; caused by inflammation or a disease of the pelvis)

### Note(s):

All fistulae open into the dentate line except traumatic fistulae, which are difficult to treat

## TREATMENT OF ABSCESES

### ❖ INCISION AND DRAINAGE

- Prompt surgical drainage to prevent permanent fistula formation
- **When we did incision and drainage → relive the obstruction → created a fistula. Fortunately, in 60% of patients the fistula will improve spontaneously.**
- 40% of the patients will have chronic manifestations and fistula
- Determine the most tender point: a 2 cm area of skin is injected with local freezing
- Elliptical or cruciate incision
- Drainage of pus & destroying all loculations

### ❖ ANTIBIOTICS

- Alone: has NO role in the primary treatment of an abscess
- Except in certain groups of people:
  - Immunocompromised

1. **Patients with valvular disease** or prosthetic valves to prevent infective endocarditis

2. Extensively diseased patients

3. **Diabetics**      4. Associated with **systemic manifestations**

### Note(s):

The process of abscess drainage results in the formation of a communication between the skin and anal canal. Therefore, 50% of abscesses will form a fistula (patient presents after few months from drainage with discharge)

## CLASSIFICATION OF FISTULAE (CHRONIC PHASE)

1. **Intersphincteric:** via the internal sphincter to the intersphincteric space and then to perineum **caused by drainage of perianal abscess**
2. **Transsphincteric:** low, via the internal & external sphincters into the ischiorectal fossa and then to the perineum **caused by drainage of ischiorectal abscess**

- 3. Suprasphincteric:** via the intersphincteric space superiorly to above the puborectalis muscle into the ischioanal fossa and then to the perineum **caused by drainage of supralevator abscess**. doctor said just know its name cause it is very complicated
- 4. Extrasphincteric (traumatic),** as in gunshot wounds: from the perianal skin  
→ levator ani muscles → rectal wall i.e. no specific relation to sphincters

### Note(s):

#### 📖 Parks Classification of Fistula-in-ano:

1. **Intersphincteric** fistulas: simple low tract, high blind tract, and high tract with rectal opening, rectal opening without a perineal opening, extrarectal extension, and secondary to pelvic disease.
2. **Transsphincteric** fistulas: uncomplicated, high blind tract
3. **Suprasphincteric** fistulas: uncomplicated, high blind tract
4. **Extrasphincteric** fistulas: secondary to anal fistula, secondary to trauma, secondary to anorectal disease, caused by pelvic inflammation

## EVALUATION OF ANAL FISTULA

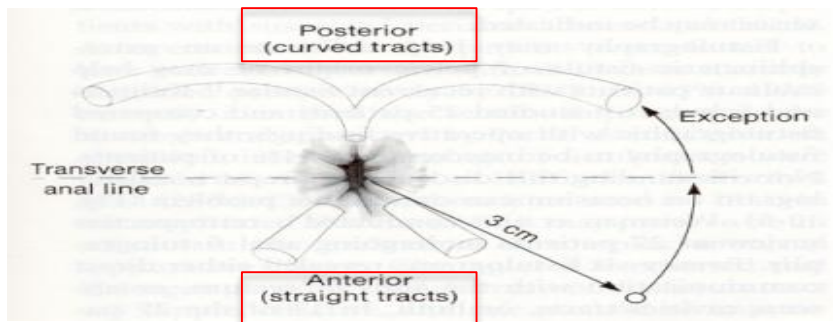
- **An accurate pre-operative evaluation is very important**
- Management depends on muscles involvement
- **Five essential points** of a clinical examination of an anal fistula:
  - ✓ **Location of the internal opening**
  - ✓ **Location of the external opening**
  - ✓ **Location of the primary tract**
  - ✓ **Location of any secondary tracts**
  - ✓ **Determination of presence/absence of underlying disease**
- **Digital examination** is up to 79%, 84%, and 71% accurate **in defining the internal opening**, primary track and secondary track, respectively.
- Resting anal tone & voluntary anal contraction before operation should be determined
- Intersphincteric tracks tend to open externally near the anal verge while transsphincteric and more complicated fistulas tend to open further away from the anal verge
- Gentle use of probes along the dentate line or through the external opening may be useful in locating internal openings
- **Injection of hydrogen peroxide via the external opening into the track may help locate the internal opening and outline the fistula tract course. This may be useful to help delineate missed internal openings.**

## GOODSALL'S RULE “for identifying the location of internal opening”

With the patient in knee-chest position, an imaginary horizontal line is drawn at the level of the anus, parallel to the floor.

For an external opening located:

- **Anterior to this line:** the tract passes radially **straight towards the internal opening** (i.e. 9 to 3 o'clock position)
- **Posterior to this line:** the **fistulae tract is curved around & internal opening is in a frank midline position** (i.e. to 6 o'clock position)



## INVESTIGATIONS , doctor said just remember the names

### • **Fistulography**

- Involves injection of contrast via the internal opening
- The accuracy rate is 16-48%

### • **Endoanal/Endorectal US:**

- Involves passage of 7-10 MHz transducer into the anal canal to help define muscular anatomy and differentiating intersphincteric from transsphincteric lesions
- 50% better than physical examination alone, 94% accuracy rate
- A standard water filled balloon transducer can help evaluate the rectal wall for any suprasphincteric extension

### • **CT scan**

### • **MRI (the best modality): “for identifying both openings+tract”**

- Findings show 80-90% concordance with operative findings when observing primary tracts course & secondary extensions
- MRI is becoming the study of choice when evaluating complex fistulae
- It has been shown to improve recurrence rates by providing information on otherwise unknown extensions

### **Note(s):**

Fistulas are usually seen as hypo-echoic perirectal defects. Sometimes, fistulous tracts can't be easily recognized with US. In order to aid identifying these tracts, hydrogen peroxide can be injected into the external opening making the tract course visible

## TREATMENT

- **Goals of therapy:**
  - Cure with lowest possible recurrence rate
  - Minimal, if any, alteration in continence in the shortest period
- **The principles are:**
  - Identification of primary opening
  - Relationship to puborectalis muscle
  - Least amount of muscle should be divided
  - Side tracts should be sought
  - Presence of underlying disease

### Note(s):

To treat any fistula, must identify the external opening by inspection and the internal opening according to goodall's rule.

## 1. FISTULOTOMY/FISTULECTOMY

- **The gold standard**
- **Considerations:**
  - Age, sex, location, type of fistula, previous anorectal surgery, anal manometer, multiple pregnancies, crohn's disease
- **Complication: Incontinence (by cutting the anal sphincter muscle)**

### A. FISTULECTOMY:

- Going around the tract, excising it completely and then close
- Complete fistulectomy creates larger wounds that take longer to heal & offers no recurrence advantage over fistulotomy

### B. FISTULOTOMY (laying open technique):

- Fistulous tract is merely laid open to heal
- Useful for 85-95% of primary fistulae i.e. submucosal, intersphincteric & low transsphincteric.
- A probe is passed into the tract through internal & external openings
- Overlying skin, subcutaneous tissue, and internal sphincter are divided, thereby opening the entire fibrous tract
- At low anal levels, the internal sphincter & subcutaneous external sphincter can be divided at right angles to the underlying fibers without affecting continence
- Curettage is performed to remove granulation tissue in the tract base
- Marsupialization of the edges speeds up healing
- Opening the wound out on the perianal skin for 1-2 cm adjacent to the external opening with local excision of skin promotes internal healing before external closure



- Perform a biopsy on any firm or suggestive tissue

## 2. SETONS

- Placement of a seton which can be made from large silk sutures, silastic vessel markers, or rubber bands that are threaded through the fistula tract
- Most patients prefer this method to avoid incontinence
- It takes 6-8 weeks or more
- Setons purposes:
  1. Visual identification of the amount of sphincter muscle involved (as markers for better postoperative assessment by outlining the track)
  2. Cutting seton (silk) → applied tightly to cut slowly\* through the tract
  3. Drainage seton (rubber) → applied loosely to serve as drains
  4. Fibrosis induced by the seton prevents separation of the ends of the anal sphincter muscle when fistulotomy is subsequently performed
- A seton can be placed alone, combined with fistulotomy or in a staged fashion. It is useful in these situations:
  - Complex/high fistulae (i.e. high transsphincteric, suprasphincteric, extrasphincteric)
  - Multiple fistulas
  - Recurrent fistula after previous fistulotomy
  - Anterior fistula in female patients
  - Poor preoperative sphincter pressures
  - Crohn's disease (IBD)
  - Immunosuppressed patients
  - Extensive scarring
  - Crazy fistula
  - Lazy sphincter

### **Note(s):**

1. Every time the patient goes to the washroom, he/she pulls the Seton till he/she can't bear the pain (slipping it through his/her hand)
2. In females, **NEVER** cut anterior fistulae, they're located in a weak muscle where cutting may lead to incontinence. Therefore, the seton technique is useful here

\*Cut slowly: for 4-6 weeks , to allow tissue healing and prevent incontinence

### 3. MUCOSAL ADVANCEMENT FLAP

- Reserved for use in patients with chronic complex high fistulae, but is indicated for the same disease processes as Seton use.
- **Technique:**
  - Involves total fistulectomy with removal of the primary & secondary tracts, excision of the internal opening, and closure of the rectal defect with a mucosal advancement flap
  - A rectal mucomuscular flap with a wide proximal base (2 times the apex width) is raised.
  - Curettage of the external portion of the tract, as opposed to fistulectomy or excision
  - The internal muscle defect is closed with an absorbable suture, and flap is sewn down over the internal opening so that its suture line doesn't overlap the muscular repair.
- **Advantages :**
  - Reduced healing time
  - No additional sphincter damage
  - No deformity of the anal canal
  - One stage procedure if primary healing is achieved
- **Disadvantages :**
  - Poor success in Crohn's or acute infection

#### **Note(s):**

Rectovaginal Fistulas: Constitute 5% of all anorectal fistulas, most commonly due to obstetric trauma. Diagnosed by endorectal US, transvaginal US, and methylene blue enema to confirm the diagnosis.

#### **CAUSES OF RECURRENCE:**

1. Failure to identify the primary internal orifice
2. Lateral or upward extensions
3. Failure to open fistulous tract
4. Premature closure of wound
5. Etiology
6. Surgeon performing the procedure

#### **CAUSES OF INCONTINENCE:**

1. 27% overall risk
2. Division of anorectal muscles
3. Severance of motor nerve to sphincter mechanism
4. Prolonged packing after surgery

5. Previous operation
6. Female

## 2. HEMORRHOIDS

### ANATOMY AND CLASSIFICATION

Vascular **cushions** located in the anal canal covered by mucosa "hemorrhoids word itself not usually indicate a disease"

- Most hemorrhoids appear in the following sites:
  1. Right anterior (11 O'clock)
  2. Right posterior (7 O'clock)
  3. Left lateral (3 O'clock)
- **Classification** (according to their relation to the dentate line):
  1. **Internal hemorrhoids** → those originating above the dentate line
  2. **External hemorrhoids** → those originating below the dentate line, painful

### PATHOPHYSIOLOGY

- They represent engorgement or enlargement of the normal fibrovascular cushions lining the anal canal. (They're not varicosities)
- Chronic straining secondary to constipation or occasionally diarrhea
- Fibrovascular cushions lose their attachment to the underlying rectal wall
- **Prolapse** of internal hemorrhoidal tissue through the anal canal
- The overlying mucosa becomes more friable and the vasculature increases.
- With overlying thinning of the mucosa and vascular engorgement, **subsequent rectal bleeding occurs**

### 3.3 CLASSIFICATION

Internal hemorrhoids are classified by history (level of prolapse) and not by physical examination →

1. Grade 1 → bleeding without prolapse
2. Grade 2 → prolapse with spontaneous reduction hemorrhoids going in and out
3. Grade 3 → prolapse with manual reduction hemorrhoids going out and he has to push it in by his hand
4. Grade 4 → incarcerated, irreducible prolapse hemorrhoids going out and not going back in, even by pushing by his hand

### SYMPTOMS

- **Internal hemorrhoids:**
  - Bright blood per rectum ☑ with or following bowel movements, is almost universally bright red, and very commonly drips into the toilet water
  - Blood may also be seen while wiping after defecation

- As a prolapsing anal mass ☐ prolapse usually occurs in association with a bowel movement, during walking or heavy lifting as a result of increased intra-abdominal pressure
- Extreme pain, bleeding and occasionally signs of systemic illness in case of strangulation (ischemia → painful)
- **External hemorrhoid:** appears as a painful skin tag (necrotic old external hemorrhoid) that doesn't bleed or prolapses " pain in hemorrhoids occurs in two condation: 1- in case of prolapse and strangulation 2- in cause of thrombosis which occurs in the external hemorrhoid"

## PHYSICAL EXAMINATION:

- **Position:** left lateral decubitus (lithotomy) position
- **Inspection:**
  - Any rashes, condylomata, or eczematous lesions.
  - External sphincter function
  - Any abscesses, fissures or fistulae
- **Palpation:**
  - Gentle digital examination
  - Lubricated finger should be gently inserted into the anal canal while asking the patient to bear down
  - The resting tone of the anal canal should be ascertained as well as the voluntary contraction of the puborectalis and external anal sphincter.
  - Masses should be noted as well as any areas of tenderness. (Abdominal masses that may increase intraabdominal pressure)
  - Internal hemorrhoids are generally not palpable on digital examination.
- **Anoscopic examination:**
  - Anoscopy is mandatory to notice any impalpable mucosal changes
  - The side viewing anoscope should be inserted with the open portion in the right anterior then right posterior and finally the left lateral position
  - Hemorrhoidal bundles will appear as bulging mucosa and anoderm within the open portion of the anoscope.

## EVALUATION OF RECTAL BLEEDING

- Must rule out cancer
- **Patients are divided into 2 categories:**
  - 1. Low risk group**
    - A young individual " <40yrs " with bleeding associated with hemorrhoidal disease without other systemic symptoms and no family history → Anoscopy and rigid **sigmoidoscopy** (1st 25cm of rectum and colon)
  - 2. High risk group**

- An **older** individual, with either a **family history** of colorectal cancer, or **change in bowel habits** → **complete colonoscopy** should be performed to rule out proximal neoplasia

## TREATMENT

- Varies from simple reassurance to operative hemorrhoidectomy.
- **90%** of cases conservative only (**constipation treatment and banding**), 10% require surgery
- Treatments are classified into three categories:
  1. **Dietary and lifestyle modification.**
  2. Non-operative/office procedures.
  3. Operative hemorrhoidectomy.

## DIETARY AND LIFESTYLE MODIFICATIONS

- The main goal of this treatment is **to minimize straining at stool.**
- **Achieved by increasing fluid and fiber in the diet**, recommending exercise, and perhaps adding fiber agents to the diet such as psyllium.
- If necessary, stool softeners may be added.

### 3.7.2 OFFICE PROCEDURES

#### 1. Rubber band ligation

- For **grade I or grade II** hemorrhoids &, in some circumstances, Grade III
- Complications include bleeding, pain, thrombosis and life threatening perineal sepsis.
- Successful in two-thirds to three quarters of all individuals with first and second-degree hemorrhoids.
- **Only used for internal hemorrhoids**
- **Never done in external ones because it's very painful** (so we just do an incision, evacuate the clot, and then close it under local anesthesia)

#### 2. Infrared coagulation

- Generates infrared radiation, which coagulates tissue protein and evaporates water from cells.
- Most beneficial in Grade I and small Grade II hemorrhoids.

#### 3. Bicep electrocoagulation

- It works, in theory, similar to photocoagulation or to rubber banding.
- The probe must be left in place for ten minutes.
- Poor patient tolerance minimized the effect of this procedure.

#### 4. Sclerotherapy

- Injection of an irritating material into the submucosa in order to decrease vascularity and increase fibrosis.
- Injecting agents have traditionally been phenol in oil, sodium morrhuate, or quinine urea.



## SURGICAL TREATMENT OF HEMORRHOIDS: HEMORRHOIDECTOMY

- The triangular shaped hemorrhoid is excised down to the underlying sphincter muscle, and the wound can be closed or left open
- Stapled hemorrhoidectomy has been developed as an alternative to standard hemorrhoidectomy

### IN SUMMARY:

- Grade I and II → lifestyle modification
  - Diet: increase fiber intake and drink lots of water.
  - Supplement fibers and laxatives if he/she constipated
  - Never squeeze or strain
  - Office treatment:
- Grade III → lifestyle modification with banding and if failed, do surgery
- Grade IV → Immediate surgical intervention

## 3. ANAL FISSURES

### 4.1 INTRODUCTION

- A tear in the anal canal extending from just below the dentate line to the anal verge.
- Most commonly in young and middle age adults.
- **Cardinal symptom is PAIN during & for minutes to hours after defecation**
- Bright red blood is common but minimal
- **Over 90% of anal fissures are located in the posterior midline**
- Almost all the rest located in the anterior midline.
- The acute fissure is a "mere simple crack" in the anoderm.
- The chronic fissure appears with the following signs:
  1. Distal sentinel tag
  2. Proximal hypertrophied anal papilla
  3. Fibrotic edges of the fissure
  4. Exposed internal sphincter fibers in the base of the fissure

### ETIOLOGY AND PATHOGENESIS

- The initiating factor is trauma, typically overstretching of the anoderm by a large hard stool (constipation) "straining"
- The proposed **explanation for the posterior midline predominance is a lack of tissue support and maximal stretching at this site.** "the lowest blood supply area in the anal canal is the posterior wall"
- Failure to heal is 2ndry to poor perfusion of the anoderm in the post midline.

#### Note(s):

Anal fissures are the most common cause of severe localized anorectal pain. They're almost always on the posteroanterior plane. Multiple fissures may be due to Crohn's disease.

- Posterior midline ischemia is the result of arterial anatomy and internal anal sphincter hypertonicity.

In simple words: Constipation → straining → pressure → hypertrophy of the anal sphincter → increased pressure inside lumen → decreased blood supply → ischemia → traumatic bowel movement → sloughing "necrotic tissue" → fissure  
 - Pain causes them not to want to defecate increasing constipation causing more physical trauma and a cycle occur

## TREATMENT

- 90% of acute fissures settle with conservative management, in those that don't surgery can be done (a lateral internal sphincterotomy)
- **Correcting constipation (keeping bowel movements atraumatic):**
  - Warm baths (sitz baths) and a high fiber diet to achieve soft bulky stools allow approximately 50% of acute anal fissures to heal within 3 weeks.
  - Stool softeners and fiber supplements are reasonable additions.
  - Recurrence is common, in the range of 30-70%, but can be reduced to 15-20% by maintaining a high fiber diet

### ❖ ACUTE FISSURE: (Topical application)

**1. Nitroglycerin:** "because of the low blood supply causing ischemia, we give them vasodilators"

- **Topical application of nitroglycerin**, a nitric oxide donor, causes a transient lowering of resting anal pressure (relaxing internal sphincter) and an increase in anodermal blood flow (vasodilator)
- A 92% healing rate within 2 weeks for acute fissures treated with application of 0.2% glyceryl trinitrate ointment t.i.d.

### **2. Calcium channel blockers:**

- Topical calcium channel blockers (2% diltiazem, 0.3% nifedipine) Heal 65-95% of fissures.
- The most common side effects are headache, flushing, and symptomatic hypotension.

#### Note(s):

- ❖ **Topical application** → vasodilation → increase blood supply → help healing of fissure

### ❖ CHRONIC FISSURE:

**1. Topical Nitroglycerin:** At eight weeks healing was observed in 68% of the GTN

**2. Botulinum Toxin:** "relaxes the sphincter" Botulinum toxin has been injected into the external and internal sphincters and, with short term follow up, healing rates of 80% have been achieved.

**3. Internal Sphincterotomy:** lateral internal sphincterotomy (LIS) achieves healing in over 95% within several weeks "LIS: is based on cutting a small portion of the internal sphincter, relaxing the muscle and increasing blood supply to allow the fissure to heal, 5% risk of incontinence"

**4. Anal dilatation:** Chronic fissures are unlikely to heal with warm baths & a high fiber diet.

## SUMMARY(from431 team work)

\***Hemorrhoids** are normal structures in our bodies that help in controlling the continence (part of continence mechanism). When these hemorrhoids get diseased and the symptoms start appear,they called diseased hemorrhoids.

\*There are internal and external hemorrhoids and they are classified by history.

\* Main symptom are are lump and sever pain. Rarely the thrombus will rupture and bleeding will occur.

\*Pathophysiology: **Internal component**: constipation->straining ->increase intrabdomenal pressure->increase pressure inside pelvis->decrease venous return->congestion (engorgement) ->repeated attacks ->vessel dilated and become bigger->either of these two situations will happened: 1- rupture and bleed or 2- Become prolapsed. (Internal component) (Pathophysiology of hemorrhoids).

**External hemorrhoids**: with external engorgement and limited space.Also, they covered by sequamous epithelium and skin->Thrombosis->pain (because the nerve supply is somatic).\*Treatment:

- 1) Dietary and lifestyle modification.
- 2) Non operative/office procedures.
- 3) Operative hemorrhoidectomy

\* **Fissure** is a tear in the anal canal extending from just below the dentate line to the anal verge.The cardinal symptom is pain during and for minutes to hours following defecation.Over 90% of anal fissures are located **in the posterior midline**.

\***fistula**: acute and chronic.

-Distal sentinel tag, a proximal hypertrophied anal papilla, fibrotic edges, and exposed internal sphincter fibres (Floor white) are features of chronicity.

\*Pathophysiology : constipation->straining->increase pressure inside->hypertrophy of the muscles->decrease blood supply->ischemia->slapping of the lining anoderm->anal fissure.

\* Treatment:

- 1) Dietary and lifestyle modification.
- 2) Applying vasodilators GTN ointment or use Ca++ channel blockers in the area locally. 3) Sphincterotomy.

\***Anorectal abscesses** (acute) and fistula (chronic).**Etiology** nonspecific: cryptoglandular in origin. 90% of perianal abscess due to Cryptoglandular. Specific: 10% of causes such as

## SUMMARY

Specific: 10% of causes such as systemic TB and Trauma.

The main symptom is painful swelling +\_ discharge.

-Classification: Supralelevator abscess, **perianal abscess.(common type)**, intersphincteric (intramuscular or submucosal) abscess and ischioanal (ischioanal) abscess.

\*Treatment:

- In fistula, the patients should have a surgery.
- For any abscess in the body incision and drainage.

\*When to use antibiotics?

- Immunosuppression. -Systemic manifestation.
- Diabetics. -Extensive disease
- Valvular disease (patients who are at risk of infective endocarditis).

Recommended **YouTube** videos:

- 1- Fistula: <http://www.youtube.com/watch?v=mPOGSuOMvmg&feature=youtu.be>
- 2- Fissure: <http://www.youtube.com/watch?v=JY7o4fOxiZE&feature=youtu.be>

## Questions

1) The commonest site for anal fissure is:

- a. anterior
- b. lateral
- c. posterior
- d. right posterior

## 2. The cardinal symptom of anal fissure is:

- a. bleeding
- b. itching
- c. pain
- d. skin tag

## 3. The anatomical location of hemorrhoids is:

- a. left anterior ,left posterior and right lateral
- b. left lateral, right anterior and right posterior
- c. right anterior, right posterior and left anterior
- d. right lateral, right anterior and left lateral

## 4. The following symptoms are common in anal problems, except:

- a. Perianal discharge
- b. Perianal itching and irritation
- c. Pain
- d. Nausea and vomiting

## 5. The proper treatment of a patient with a peri-anal abscess is;

- a. Incision and drainage as soon as fluctuation develops
- b. Incision and drainage with excision of the internal opening
- c. Prompt incision and drainage
- d. Use of antibiotics and sitz bath



### Answers:

1st Questions: C

2nd Questions: C

3rd Questions: B

4th Questions: D

5th Questions: C