بسم الله الرحمن الرحيم
ANORECTAL DISORDERS
I-SURGICAL ANATOMY

• RECTUM:
  ➢ The rectum measures about 6 inches in length. It begins opposite the third piece of the sacrum as a downwards continuation of the colon to form the 'rectosigmoid', and ends at the pelvic floor by joining the anal canal.

• ANAL CANAL:
  ➢ The anal canal is about 1.5 inches long, beginning at the ‘anorectotal ring’ as continuation of the rectum, and extending downwards and backwards to the anal margin.
  ➢ The anal canal is divided into two equal parts by the ‘pectinate line’.
ANORECTAL MUSCULATURE:

1- The longitudinal muscle.

2- The circular muscle.

3- The external sphincter.
   a- the subcutaneous sphincter.
   b- the superficial sphincter.
   c- the deep sphincter.

4- The levator ani muscle.
   a- the iliococcygeus.
   b- the pubococcygeus.
   c- the puborectalis.
The lining membrane of the anal canal.
**NERVE SUPPLY**

1- The sympathetic supply.
2- The parasympathetic supply.
3- The somatic supply.

**BLOOD SUPPLY**

1- Superior haemorrhoidal artery end by two terminal branches.
2- The middle haemorrhoidal artery.
3- The inferior haemorrhoidal artery.
4- The middle sacral artery.
THE VENOUS DRAINAGE
1- The superior haemorrhoidal vein.
2- The middle haemorrhoidal vein.
3- The inferior haemorrhoidal vein.

II- CONGENITAL ANOMALIES

A- Low anomalies:
1- Covered anus.
2- Ectopic anus.
3- Anal membrane.

B- High anomalies:
1- Rectal stresia.
2- Rectal agenesis.
3- Cloaca
Distribution of anal vasculature illustrating why haemorrhoids are classically sited at 3, 7 and 11 o’clock.
II- INJURIES AND FOREIGN BODIES

INJURIES

Causes:

1- Open injuries.  
2- Closed injuries.

Treatment: Urgent laparotomy, perforation is closed and pelvic colostomy is performed.

FOREIGN BODIES

1- Swallowed objects, such as chicken or fish.

Treatment: is by removal from below after dilation of the anal sphincter.
Haemorrhoids may be internal or external, according to whether they are internal or external to the anal orifice.

Degrees:

1\textsuperscript{st} degree piles: These piles are confined to the anal canal and are not prolapsed during defecation but they tend to ulcerate and bleeding.

2\textsuperscript{nd} degree piles: The piles prolapses only at defecation and slips back spontaneously when the expulsive effort ceases.

3\textsuperscript{rd} degree piles: The pile prolapses on walking or straining and remains down until is digitally replaced.

4\textsuperscript{th} degree piles: The haemorrhoidal mass remains protruded (out the anus) at all times and can not be forced into anal canal with the help of the finger.
AETIOLOGY:

A- Primary haemorrhoids:
1- Chronic constipation.
2- Anatomical factors,
3- Portal congestion due to over eating or alcoholic excess.
4- Hereditary factors,
5- Sphincteric relaxation from old age, debility or hot weather.

B- Secondary haemorrhoids:
1- Pregnancy,
2- Venous obstruction, as in uterine fibroids or ovarian cysts.
3- Straining on micturition due to S.E.P.
4- Venous congestion due to portal obstruction, or cardiac or pulmonary disease.
5- Carcinoma of the rectum or sigmoid due to comp. on sup. hae.
CLINICAL FEATURES:
1- Of internal piles.
1- Bleeding at defecation *(a splash in the pain).*  2- Prolapse.
3- Pain.  4- Pruritus.  5- Anaemia.  6- Discharge.

COMPLICATIONS:
1- Profuse bleeding: Is the most common complications.
2- Ulceration.  3- Gangrene.  4- Fibrosis.
5- Suppuration.  6- Pylephlebitis = Portal pyaemia.
7- Acute thrombosis. In which one or more of internal piles become prolapsed and strangulated by the sphincter. The piles become firm and and there is oedema. *(acute attack of piles).*

DIAGNOSIS:
1- Inspection. 2- Palpation. 3- Proctoscopy. 4- Sigmoidoscopy
TREATMENT.

a- Conservative treatment: Analgesics, Laxative, Antibiotics.

b- Injection treatment: Of ethanol amine oleat for 1st and early 2nd degree. This is best done by Gabriel’s high submucous injection method.

c- Operative treatment: Indications.

* Fibrosis.  *Ineroexsternal haemorrhoids

1- Rubber banding.  2- Cryosyrgery.  3- Stapler Haemorrhoid.


2- External Haemorrhoids:

1- Acute thrombotic external pile. It is perianal haematoma due to rupture of a dilated vein. Treated by Excision

2- Chronic external piles. It is skin tags, Treated by Excision
Fig. 54.26 Ligation and excision of haemorrhoids. Open technique: (a) the skin is cut to the left lateral haemorrhoid; (b) transfixon of the pedicle; (c) ligation.
Anal fissure is an elongated ulcer in the lower part of the anal canal which is nearly always solitary and rarely extends beyond the pectinate line.

- It usually occupies the midline posteriorly.

- Occasionally, it affects the midline anteriorly (10% in females, and 1% in males).

- Lateral fissure are so rare that their presence should suggest a specific lesion, such as Cron’s disease, ulcerative colitis, T.B. or leukemia.
1- The common posterior location is explained by
   The Y-shaped arrangement of the superficial external sphincter which provides less support in this area.

2- Anterior fissure in female are due to relaxation or tearing of the perinum. Excessive straining during child birth causing overstretch on anterior wall of the anal canal.

3- Laceration of the anal canal by a sharp foreign body.

4- Tearing down of an anal valve or fibrous polyp.
PATHOLOGY

Vicious circle:

Constipation → to fissure → pain → Constipation.

1- Chronicity: The fissure becomes wider and deeper.

2- A "sentinel" skin tag due to oedema, infection, and irritation by discharge from the fissure.

3- A hypertrophied anal papilla.

4- Contracture of the anus.

5- Suppuration.
**Clinical Features:**

- Anal fissure is commoner in females than in males.

1. Pain during and after defecation is the chief symptom.

2. Constipation due to pain.

3. Pruritus due to serous discharge.

4. Reflex symptoms, such as dysuria, dysmenorrhoea, pain at back of the thighs may occur.
**DIAGNOSIS:**
1- Inspection.
2- Palpation "buttonhole"
3- Proctoscopy.

**DIFFERENTIAL DIAGNOSIS**
1- T.B. ulcer.
2- Carcinoma.
3- Syph.
4- Abrasions.
5- Leukaemic infiltration.
6- Crohn’s disease, ulcerative colitis.

**TREATMENT:**

a- Conservative treatment:
1- Stool softeners.
2- Hot baths.
3- Ointments.
Operative treatment.

1- Fissurectomy and dorsal sphincterotomy.
2- Lateral internal sphincterectomy.

**V-anorectal abscess**

- It is incidence is much higher in men than women.
- The proportion being about 5:1.

**Classification:**

1- Perianal abscess (60%).
2- Ischiorectal abscess (30%).
3- Submucous abscess (5%).
4- Pelvirectal abscess.
The 4 types of anorectal abscess (A) perianal, (B) ischiorectal, (C) submucous and (D) pelvirectal.
Spread of infection from primary anal glands abscess (A) to the perianal region (B) and the ischiorectal fossa (C)
CLINICAL FEATURES

1- SYMPTOMS: Acute throbbing pain and increased by coughing, sneezing, straining.

2- SIGNS: Swelling, tenderness, induration.

TREATMENT.

1- External drainage.

2- Rectal drainage is the best method for submucous, intersphincteric and pelvirectal abscesses.
VI- FISTULA-IN-ANO

- A fistula-in-ano is a chronic granulating track in relation to the anal canal and anus.
- Most fistulae result from failure of healing of an anorectal abscess due to several factors.

**TYPES OF ANAL FISTULA**

- **I – Low level.** Open in the anal canal below the anorectal ring.
- **II- High level.** Open in the anal canal at or above the anorectal ring.

**PARKS CLASSIFICATION**

1- Subcutaneous.
2- Sumucous.
3- High-level anal fistula (25%)
4- Low-Level anal fistula (70%) This is the most common type.
5- Pelvirectal (3%).
Types of anal fistulae

Fig. 54.33 Types of anal fistula (standard classification): (1) subcutaneous, (2) submucous, (3) low anal, (4) high anal, and (5) pelvirectal.

Fig. 54.34 Types of anal fistula: (1) intersphincteric, (2) transsphincteric (which may be high or low), and (3) supraleaver. (After Sir Alan Parks.)
Goodsall’s rule: The transvers anal line divides the fistulae into two groups.
a- Anterior: Tend to be direct type with straight tracks.
b- Posterior: Has curved tracks “Horseshoe” or Semi-horseshoe fistula.

- **Clinical Features.**
- **Symptoms.**
  1. Discharge which irritates the skin, pus.
  2. Pain.

- **Signs.**
  1. Inspection: Reveals one external opening.
  2. Palpation: Track of the fistula is often palpable as an indurated cord.
- **P.R. Examination:** The internal opening may be made out as a palpable depression or an indurated nodule.
Goodsall’s rule
3- Proctoscopy:
4- Radiography: Fistulogram, CT, MRI.
5- Biopsy.

**TREATMENT.**

1-Fistulectomy and fistulotomy 90%. 2-Seton. 3-Fibrin glue.

**VII- RRURITUS ANI**

- Intractable itching at the anus may occur at any age but is usually met with in adults, and is more common in men than in women.
- It is more frequently met with in the summer months than in winter.
AETIOLOGY
1- Poor hygiene due lack of cleanliness, excessive sweating.
2- Parasitic infections.
4- Skin disease, such as contact dermatitis.
5- Allergy.
6- Idiopathic.

TREATMENT
1- Hygienic measures.
2- Diet.
3- Bowles.
4- Drugs.

VIII- PROCTITIS
Inflammation of the rectal ampulla may be due to non-specific inflammation or to infection with specific organisms.
Prolapse of the rectum may be **partial**, in which the everted tissue consists of mucous membrane only, or **complete** if the entire thickness of the rectal wall is extruded.

**AETIOLOGY.** It occurs in the extremes of life. **IN CHILDREN**, the predisposing causes are.

1- Straining at stool from diarrhoea or constipation.
2- Chronic cough, whooping cough.
3- The vertical, straight course of the rectum.
4- Reduction of the supporting fat in the ischiorectal fossa.
In adults, the predisposing causes depend up on the type of the prolapse.

1- Partial prolapse Less than 1.5 inches: may be due to.
   a- Straining from urethral obstruction males or childbirth in females.
   b- Advancing degree of prolapsing piles.
   c- loss of sphincteric tone.

2- Complete prolapse (procidentia) Is larger than partial prolapse.

   It is type of sliding hernia of rectovesical or rectovaginal pouch due to stretching of the levator ani and yielding of the pelvic fascia from pregnancy, obesity or visceroptosis.
Rectal prolapse in child
**Clinical Features**

- Prolapse occurs on straining, coughing, sneezing or standing, with bleeding.
- Incontinence of faeces is common, and in women it may be associated with incontinence of urine.

**Complications of prolapse.**

- 1. Infection and ulceration.
- 3. Thrombosis.

**Treatment.**

- a. Prolapse in children
  - 1. Digital reposition.
  - 2. Perirectal injection of alcohol.
b- Partial prolapse in adults is best treated by
1- Ligature-excision of the prolapsed mucosa.
2- Goodsall’s stitch.
3- Injection of 5% phenol in oil are given into the submucosa by multiple punctures.
4- Electrical treatment. (in case of sphincteric relaxation)

c- Complete prolapse in adults.
1- Cerclage (Thiersch’s operation).
2- Rctopexy. (Lockhart – Mumary’s operation)
3- Rectosigmoidectomy (Mikulicz’s operation)
4- Obliteration of the peritoneal pouch (Moscowitch’s operation).
5- Colopexy.
6- Proctopexy (by laparoscopy).
7- Abdominal repair. Suturing the levators in front of the rectum.
8- Low anterior resection.

x- BENIGN TUMOURS

a- Epithelial tumours.
1- Anal warts (Condylomata Acuminata).
2- Juvenile polyp.
3- Villous papilloma. Can turn to malignancy.
4- Adenomatous polyps. Can turn to malignancy.
5- Familial polyposis. Can turn to malignancy.
b- Connective - tissue tumours.
1- Fibrous polyp.        2- Lipoma.        3- Myoma.
4- Haemangioma.        5- Benign lymphoma.

XI- MALIGNANT TUMOURS

1- Carcinoma of the rectum.

- Males are affected nearly twice as often as females.
- The disease is more common in patients affected by familial polyposis, Gardner’s syndrome, villous papilloma, adenomatous polypi and chronic ulcerative colitis.

PATHOLOGY.

- About 70% of cases involve the upper 1/3 while 25% are situated in the ampulla and only 5% found in the distal inch.
Types:

It is usually **Adenocarcinoma** which occurs in 4 forms.

1- The proliferative tumour.
   It commonly arises in the rectal ampulla, and is characterized by necrosis, ulceration and haemorrhage.

2- the ulcerative form.

3- The annular form. It is anaplastic carcinoma.

4- Colloid carcinoma.
   It is highly malignant tumour containing mucin aggregations.
Carcinoma of the rectum associated with haemorrhoids
SPREAD:

1- Local spread.

2- Lymphatic spread to pararectal glands, superior haemorrhoidal, inferior mesenteric, aortic and coeliac glands.

- Lateral spread along the lymphatics accompanying the middle haemorrhoidal veins.

3- Venous spread to liver, lung, adrenals.

4- Peritoneal spread
**GRADING:** Broder’s Histological classification is based on the cell-differentiation.

Grade I most cells (75-100%) are differentiated.

Grade II the proportion is reduced to 50 – 75%,

Grade III to 50-25%,

Grade IV almost all cells are anaplastic.
STAGING: DUKE’S CLASSIFICATION

1\textsuperscript{st} stage (A cases) the growth is limited to the rectal wall, and the prognosis after surgical removal is excellent.

2\textsuperscript{nd} stage (B cases) the tumour has spread to the extrarectal tissues but has not yet invaded the regional L.N. and the prognosis is good.

3\textsuperscript{rd} stage (C cases) the tumour has given rise to lymphatic metastases and the prognosis is bad.

4\textsuperscript{th} stage (D cases) distant metastases the prognosis is hopeless.
DUKE’S CLASSIFICATION
CLINICAL FEATURES

- Bleeding which often slight.
- Constipation with feeling of incomplete defecation.
- Passage of flatus and a little blood stained mucus early morning (spurious diarrhoea).
- Pain is late symptom.

DIAGNOSIS:

- About 90% of rectal cancer can be felt digitally P.R.
- Virchow’s gland enlargement due to dissemination along thoracic duct (Troisier’s sign).
INVESTIGATIONS
1- Proctoscopy and sigmoidoscopy.
2- Biopsy.
3- Barium enema.
4- Pyelography.
5- Abdominal C.T- and MRI.

TREATMENT:
a- Resection.
1- Abdominal resecection (Hartmann’s operation).
2- Perineal excision (Lockhart Mummary’s operation).
3- Abdomino - perineal excision of Miles.
4- Perineo - abdominal excision (Gabriel’s operation).
5- Dixon’s anterior resection.
6- Pelvic excentration.

**B-Palliative treatment.**
1- Pelvic colostomy.
2- Radiotherapy.
3- Chemotherapy.
THANK YOU

PROF. MOHAMED ALY
3rd degree haemorrhoids
A thrombosed external haemorrhoid that has burst
Surgical anatomy of the rectum and anal canal