

CA COLON

Types of cancer in the colon and rectum

1. Adenocarcinomas:
2. Carcinoid tumors:
3. Gastrointestinal stromal tumors (GISTs):
4. Lymphomas:
5. Sarcomas:

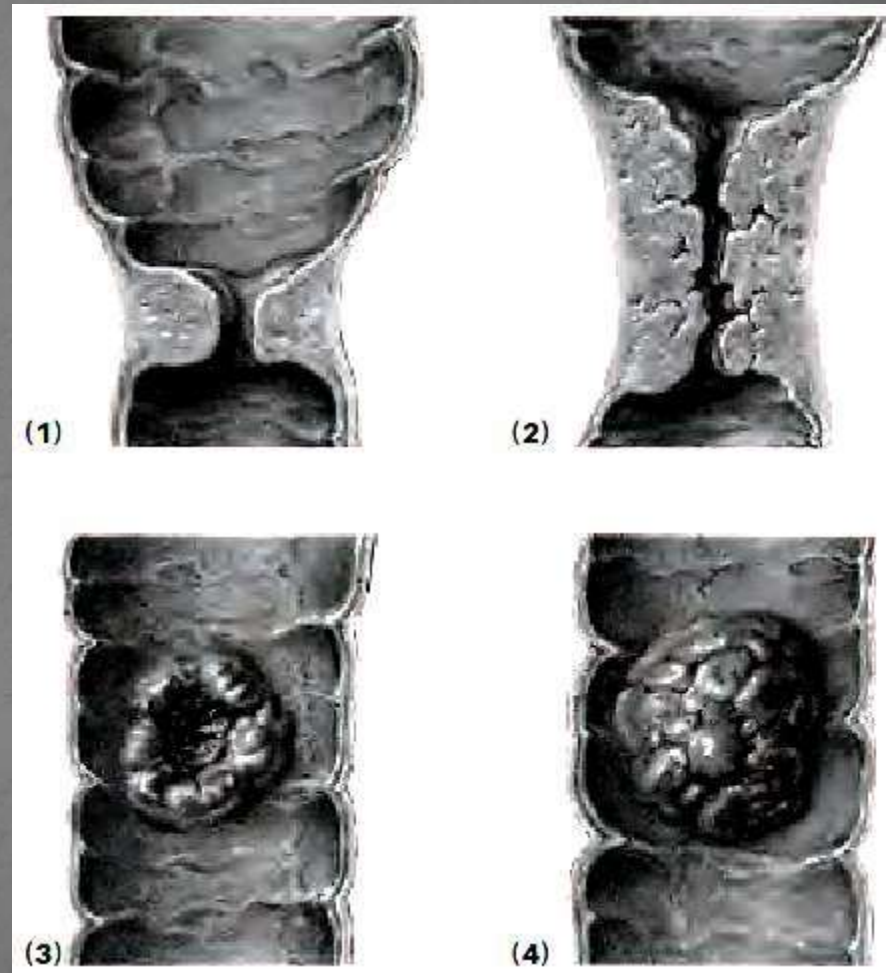
Classification of colorectal cancer

Macroscopic:

1. Annular
2. Tubular.
3. Ulcerative.
4. Cauliflower

Microscopic

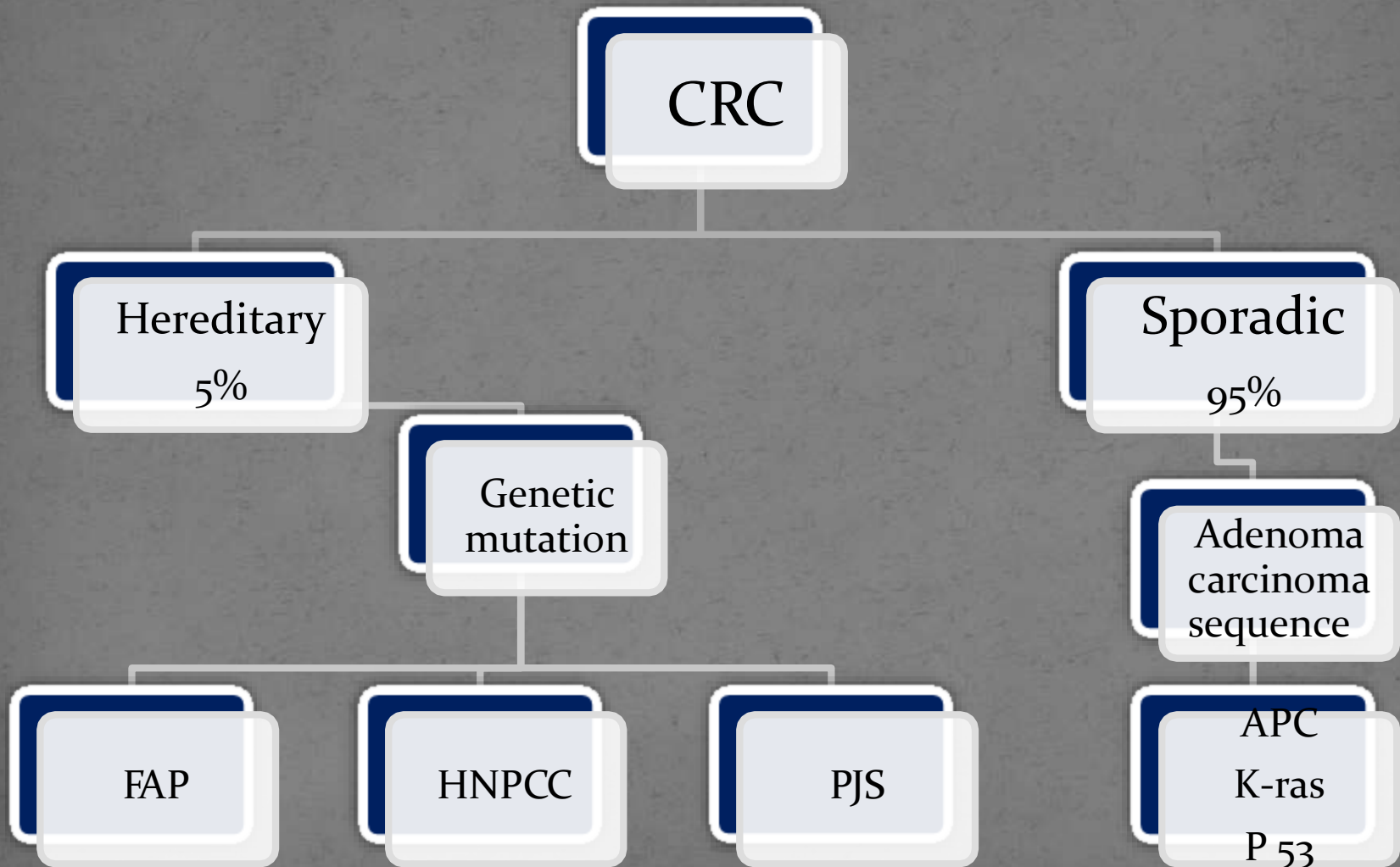
1. Adenocarcinoma
2. Squamous cell ca
3. Adeno squamous ca
4. Spindle cell carcinoma
5. Neuroendocrine cell ca



Risk factor

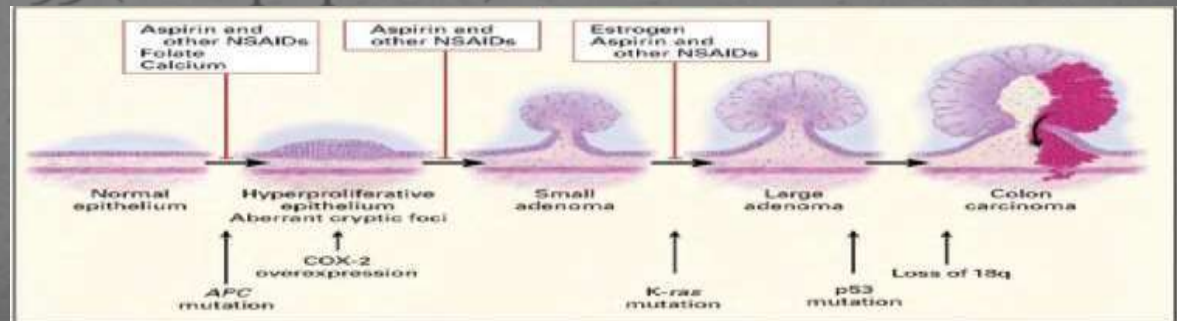
- Red meat and saturated fatty acids
- Obesity
- Sedentary lifestyle
- Old age
- Alcohol and Smoking
- FAP - **defect in APC gene on chromosome 5q21**
- HNPCC - MSH2 & MLH1 gene defect
- Family history – 2 or more first degree relatives
- Inflammatory bowel disease – Ulcerative Colitis
- Adenomatous polyp

Pathogenesis

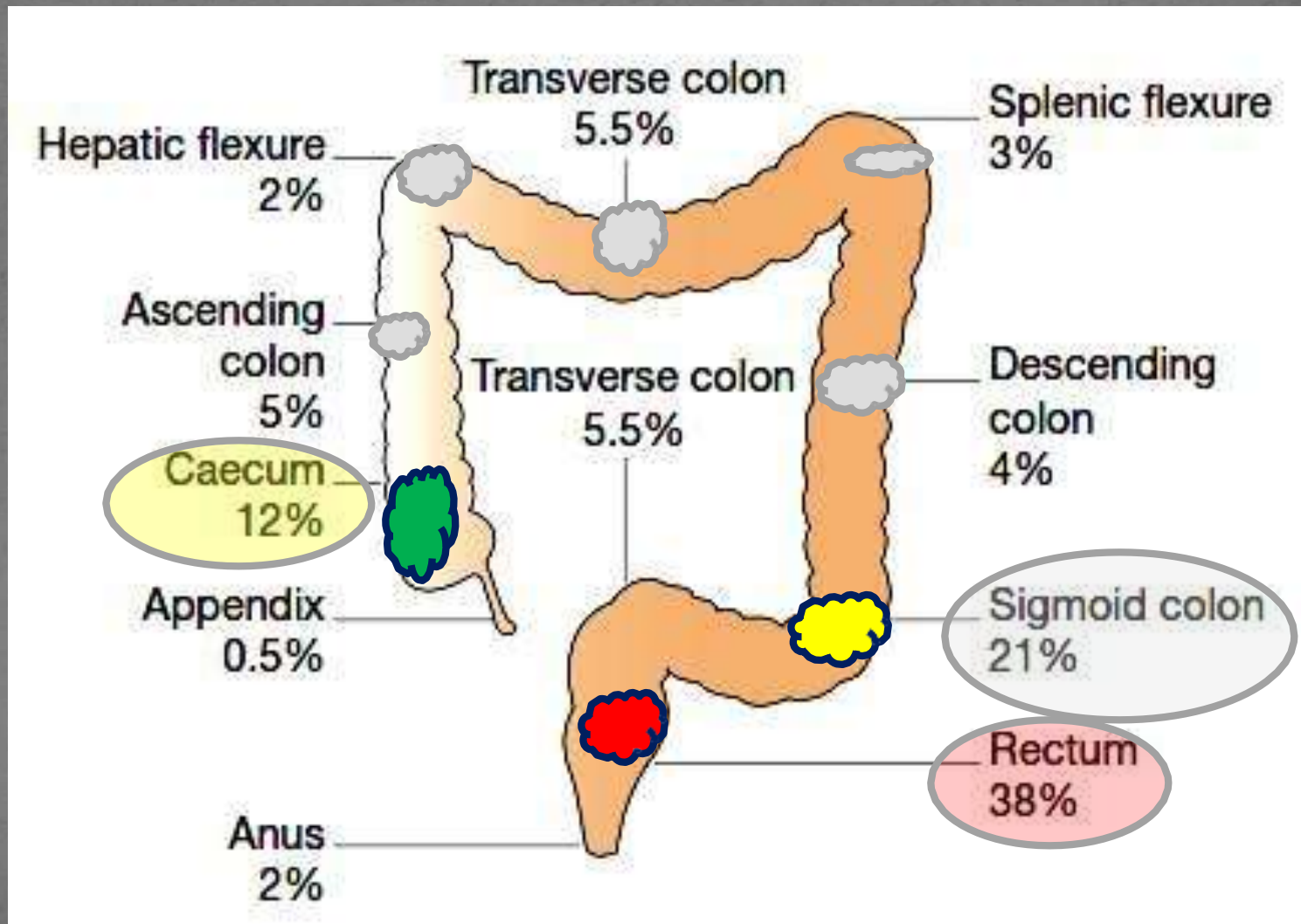


Adenoma - Carcinoma sequence

- Accounts for upto 75-95% of sporadic colo-rectal tumours and typically arise from adenomatous polyp
- Mutation in **wnt signaling pathway** →
 1. APC **mutation** → activation of proto-oncogene (required for normal cell renewal) → over expression
 2. **Activation** of oncogene k-ras → increase cell proliferation.
 3. **Suppression** of P 53 (for apoptosis) → immortal cell



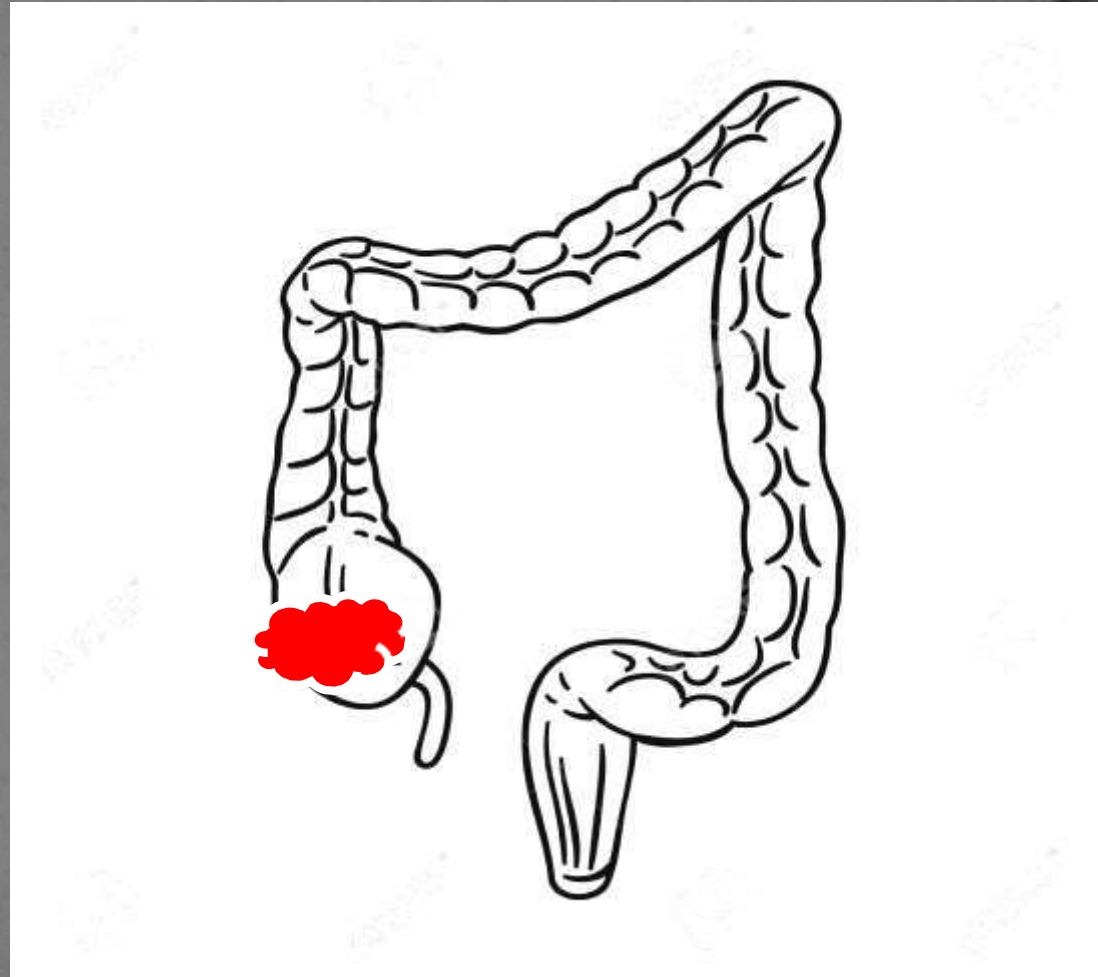
Distribution of colorectal cancer



Clinical features

Caecum

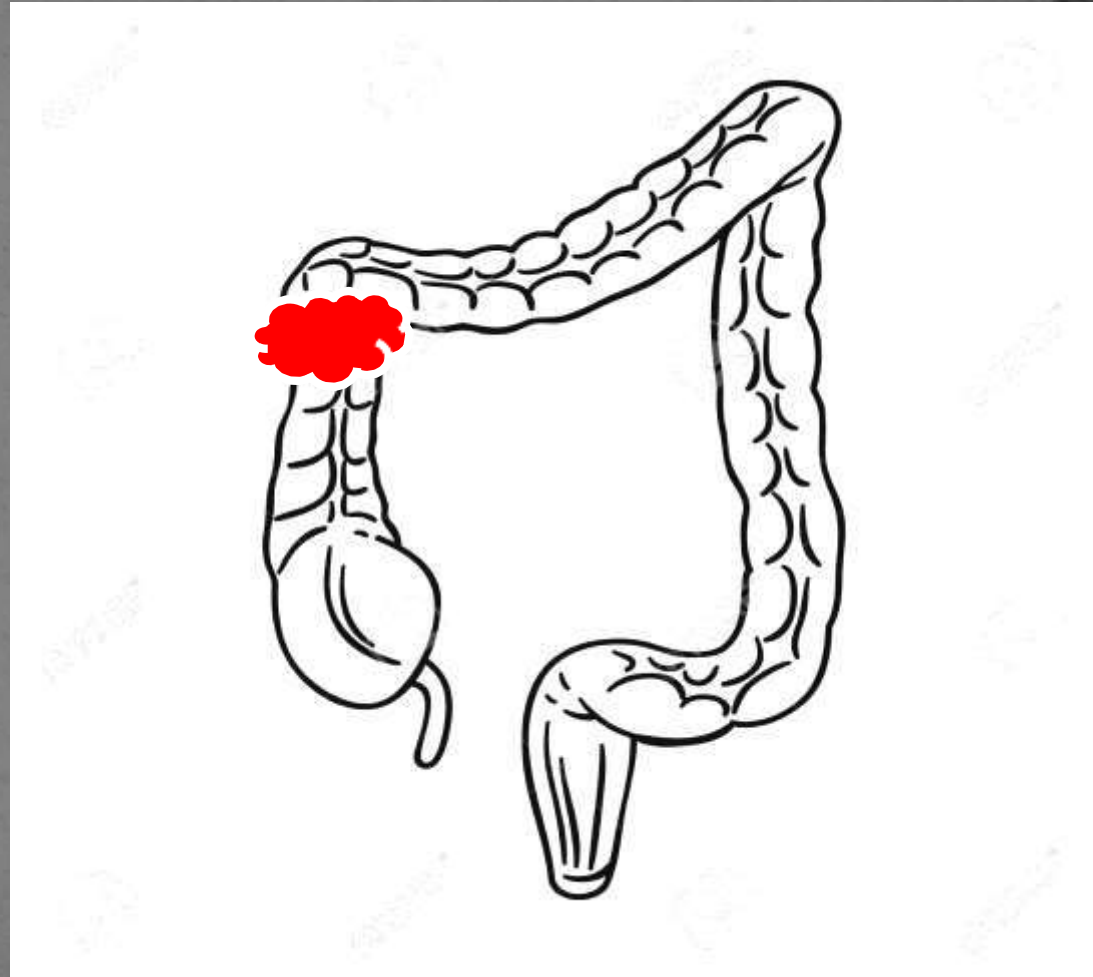
- Anaemia
- Mass
- Dark stool
- Obstruction
- Dyspepsia
- Diarrhoea
- Appendicitis



Clinical features

Rt. colon

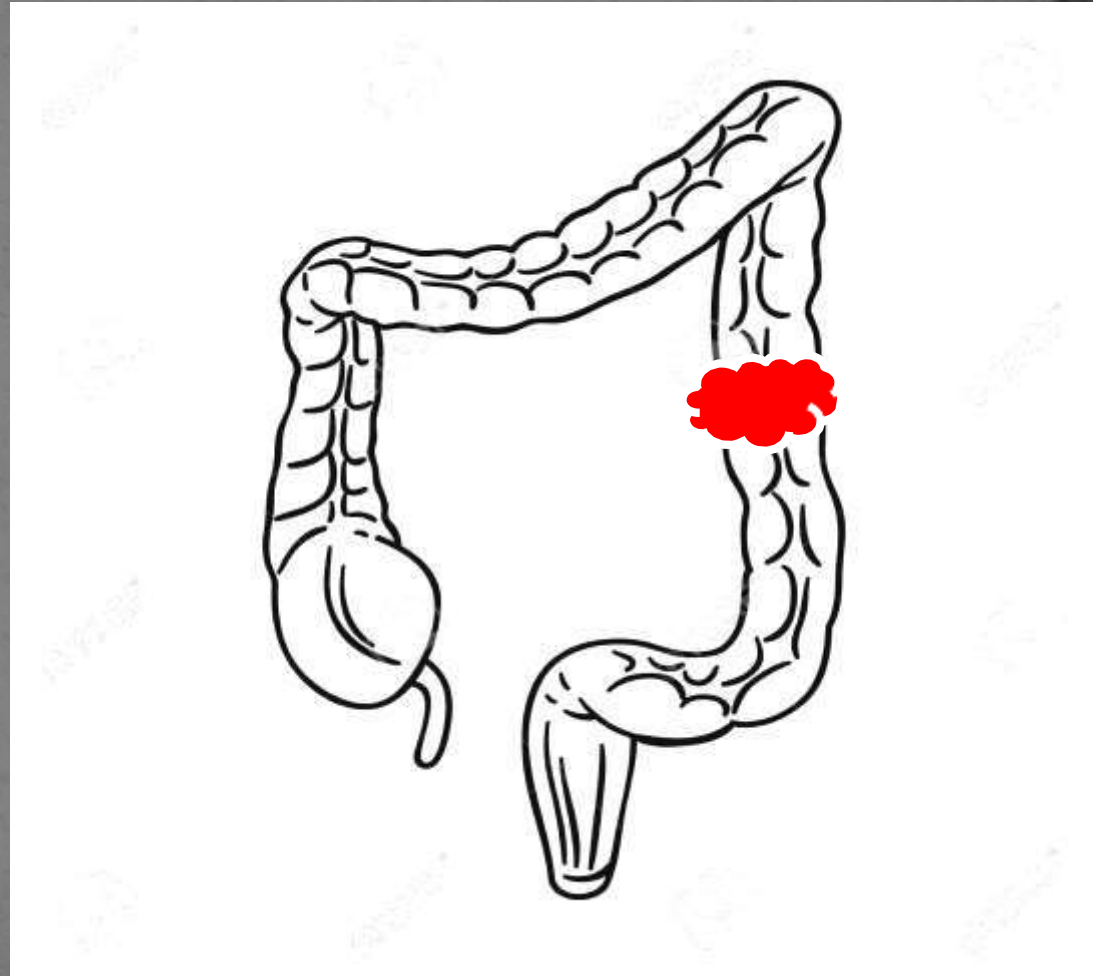
- Anaemia
 - Mass
 - Dark stool
 - Diarrhoea
 - Dyspepsia
- a



Clinical features

Lt. colon

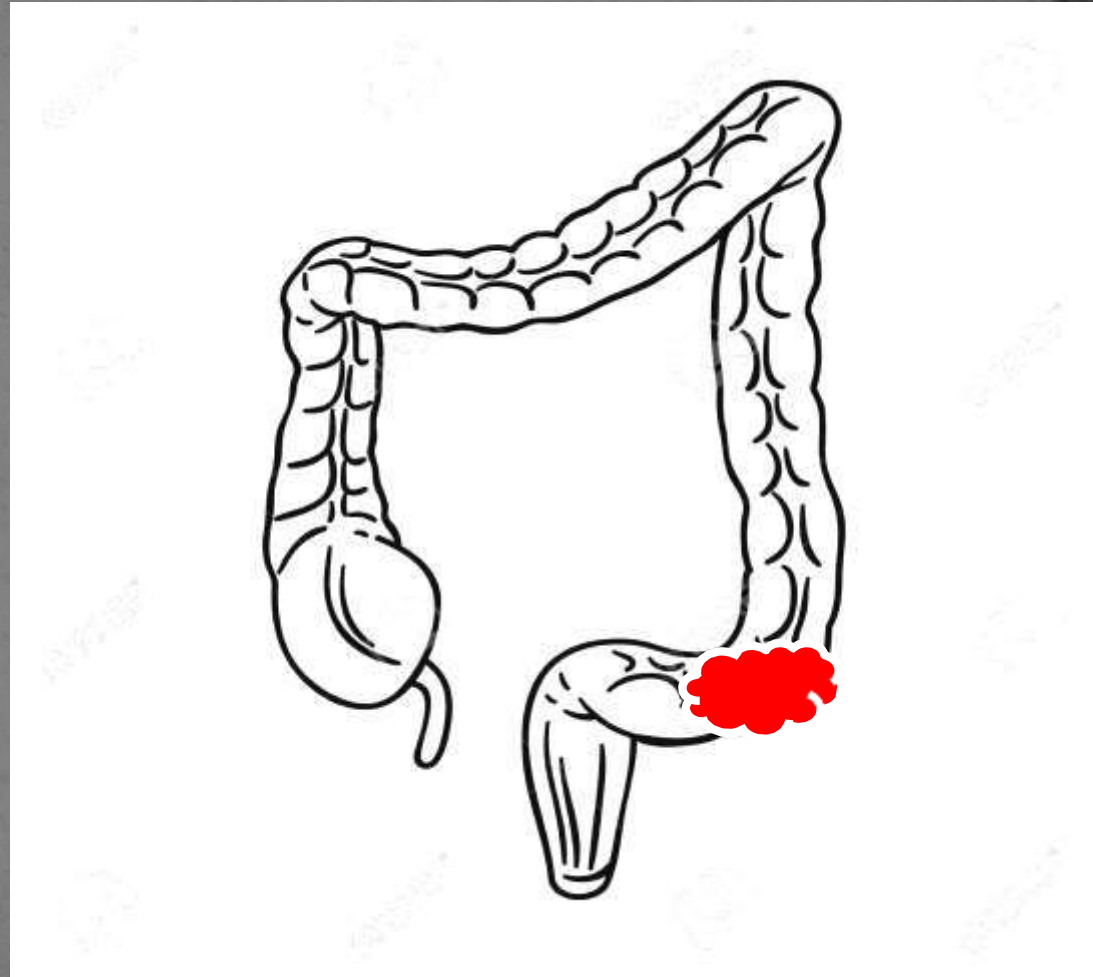
- Progressive Constipation
- Obstruction
- Changes in the bowel habit
- Colicky pain
- Blood in stool
- Mass



Clinical features

Sigmoid colon

- Early morning diarrhea with blood and/or mucous
- Obstruction
- Altered bowel habit
- Mass
- Colo-vesical fistula



Clinical features

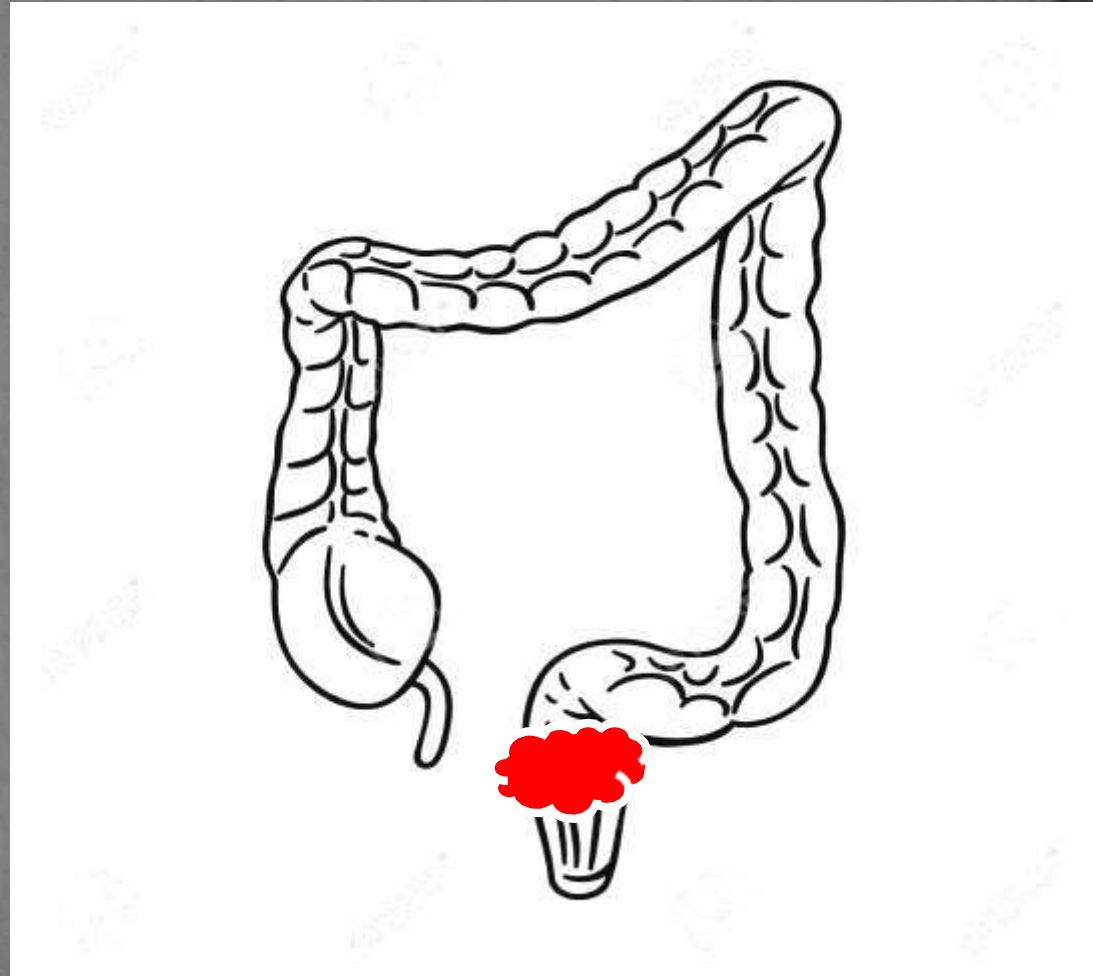
Rectum

● **Early**

- Per rectal bleeding
- Tenesmus
- Spurious diarrhoea
- Bloody slime
- Early morning diarrhoea
- Altered bowel habit

● **Late**

- Pain
- Weight loss



Investigations

- Screening

- Faecal OBT
- Colonoscopy

- Diagnostic

- Colonoscopy
- Proctoscopy
- Biopsy
- Ba enema
- CT Colonoscopy

- Prognostic

- CEA
- CA – 19-9

- Staging

- USG
- CXR
- CT chest & Abdomen
- Pelvic MRI
- TRUS

Management Protocol

1. Preoperative workup
2. Operative procedure
3. Post operative management
4. Surveillance program

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1. Planning
 2. Counseling & consent
 3. Tumour board formation
 4. Correction of co-morbidities
 5. Prophylaxis
 6. Bowel preparation

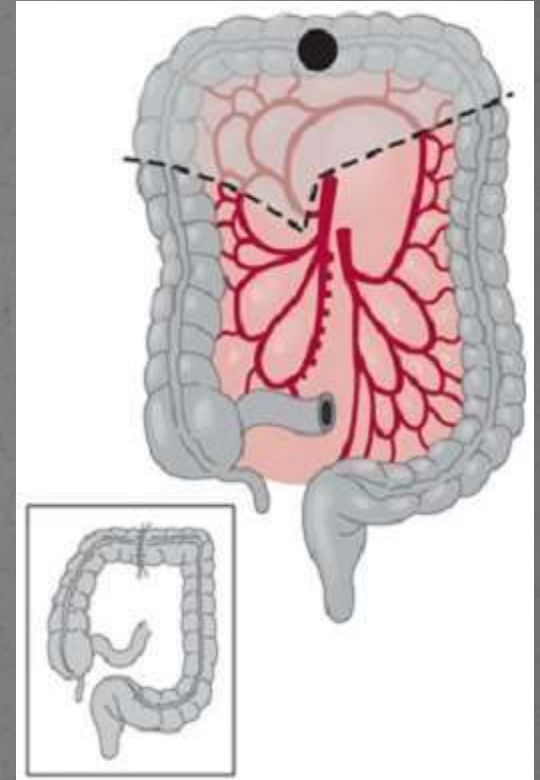
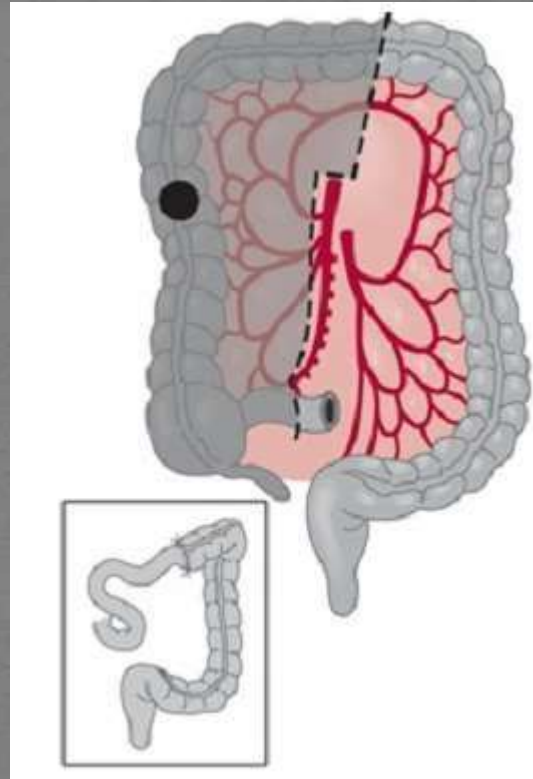
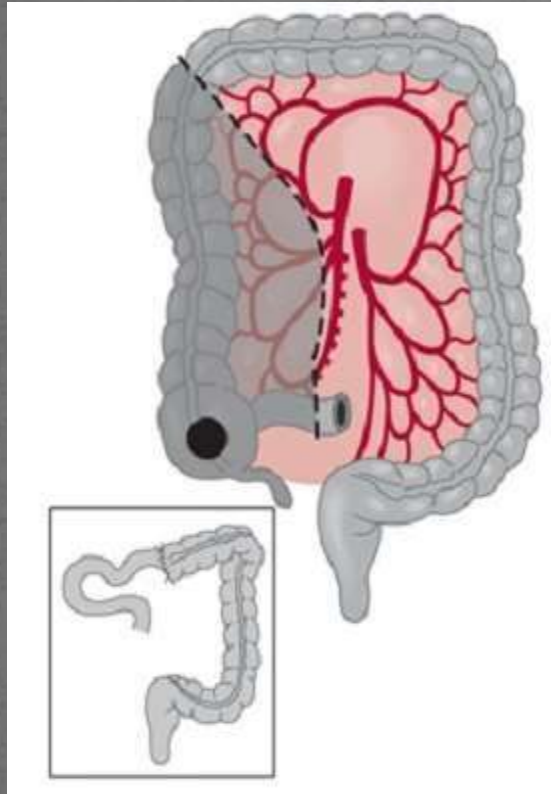
Treatment modalities

- Surgery
- Chemotherapy
- Radiotherapy
- Targeted therapy
- Immuno therapy
- Alternative treatment

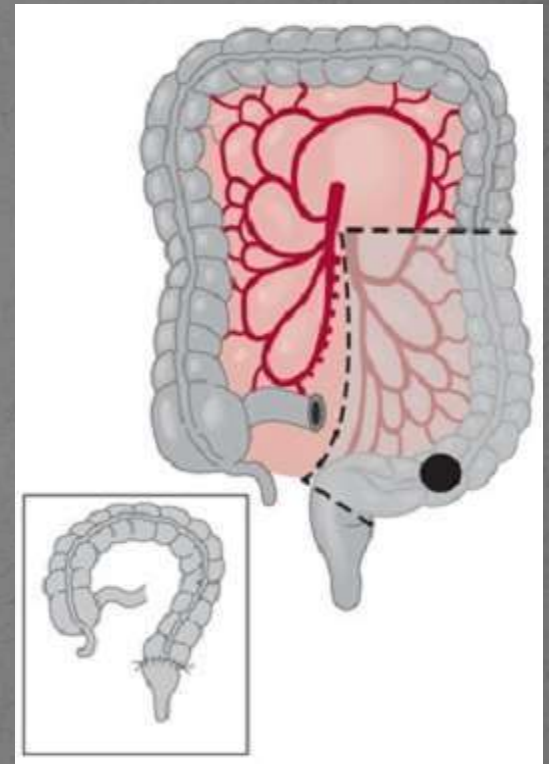
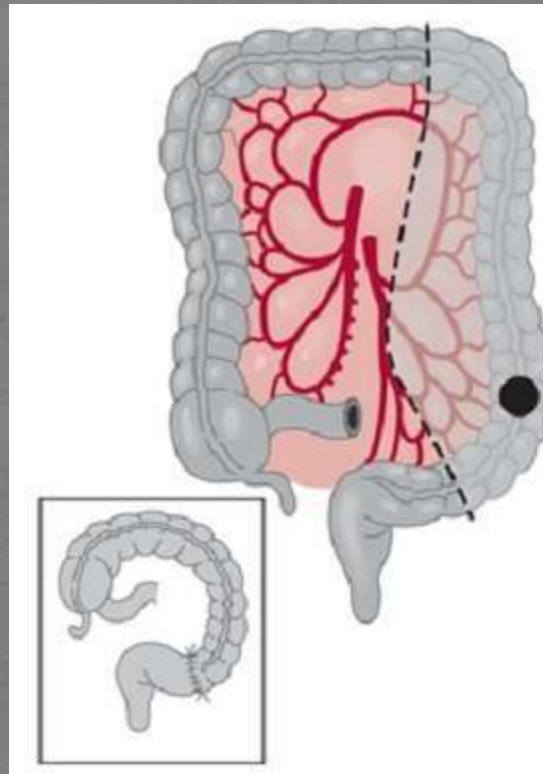
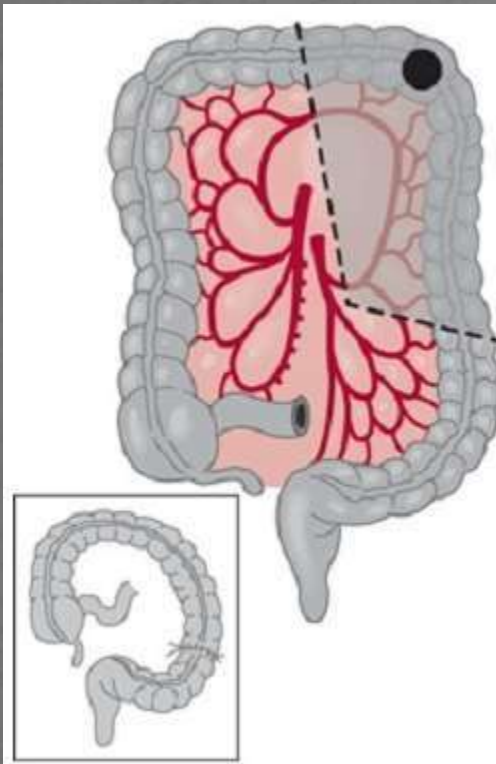
Surgery

- **Surgery** is the mainstay of treatment
- **Radiation and/ or chemotherapy** are given before or after surgery
- The type of surgery depends on the **site and stage** of the cancer
- Surgical treatment maybe **curative** (stage I,II, III, or IV with resectable metastatic disease) or **palliative** ((stage IVb))

Colonic ca



Colonic ca



Rectal cancer

1. Local excision: TEMS / TAMIS
2. Radical surgery
 - I. AR with TME
 - a. High AR
 - b. Low AR
 - c. Ultra Low AR
 - II. APR
3. Surgery in advanced carcinoma

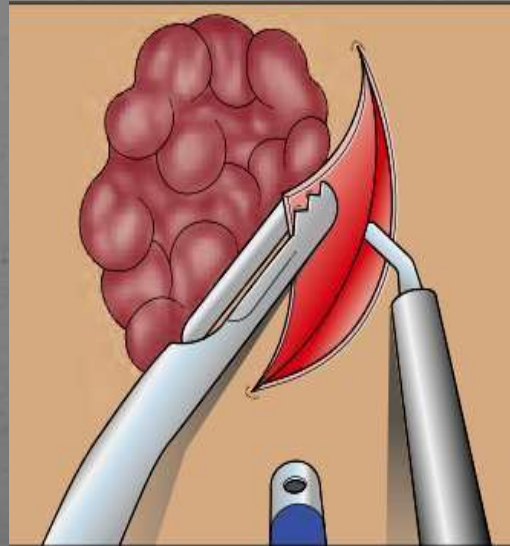
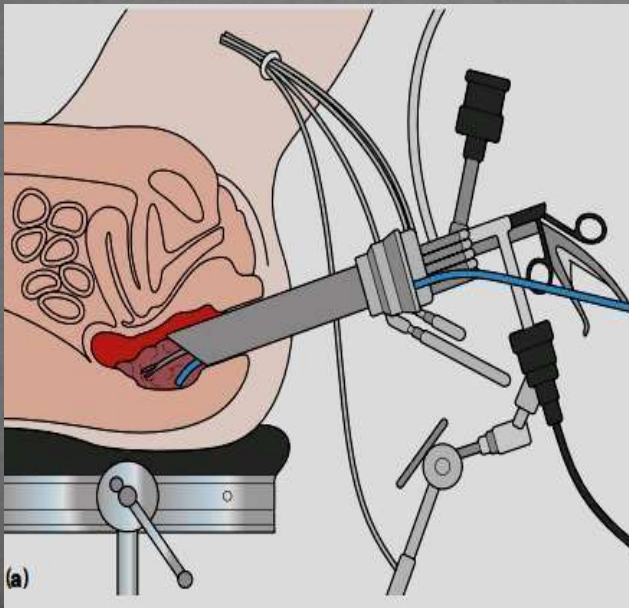
Approach

- Open
- Laparoscopic
- Robotic
- Robotic
- Trans anal
- Trans anal



Trans anal endoscopic micro surgery: TEMS

- For **mid and lower** rectal tumor
- For rectal **adenomas** and **early** rectal cancers
- Must be below **peritoneal reflection**



TEMS

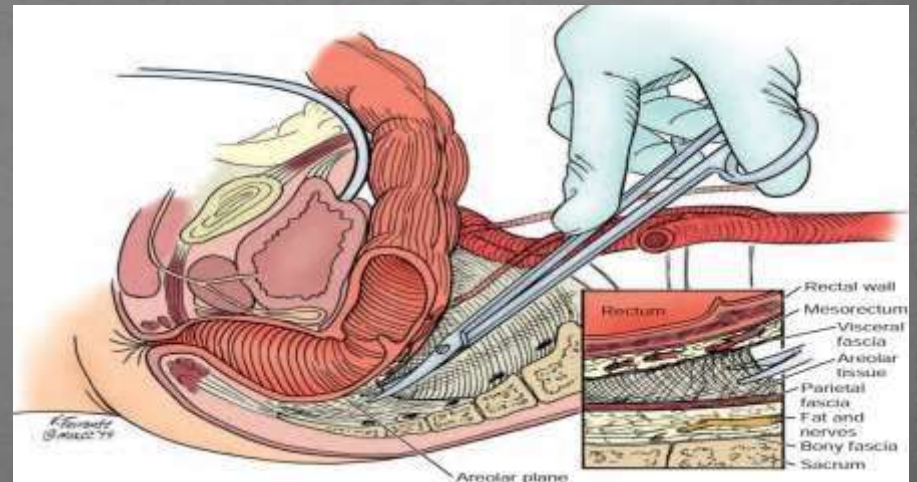
- **Indication:**

- Well differentiated
- Grade 1 or 2
- Not mucinous adenoma
- Lymphnode -ve
- Diameter < 3cm
- Tumor invades only submucosa

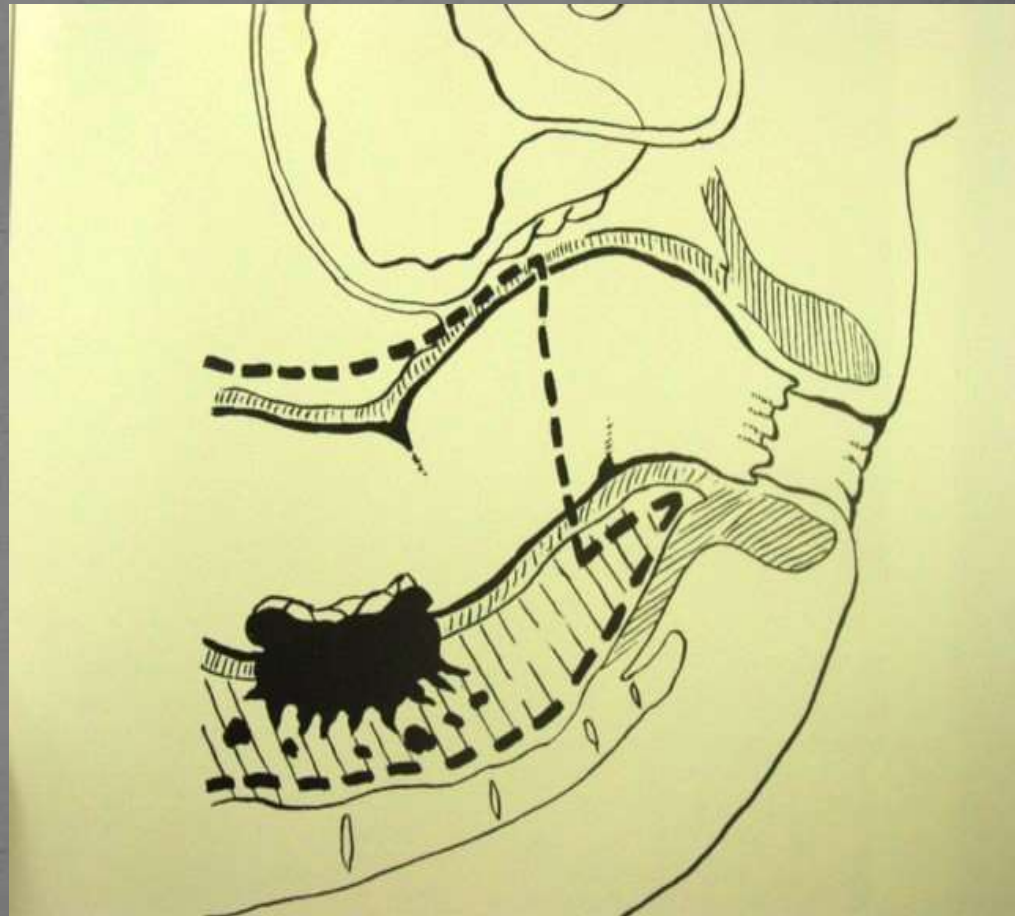
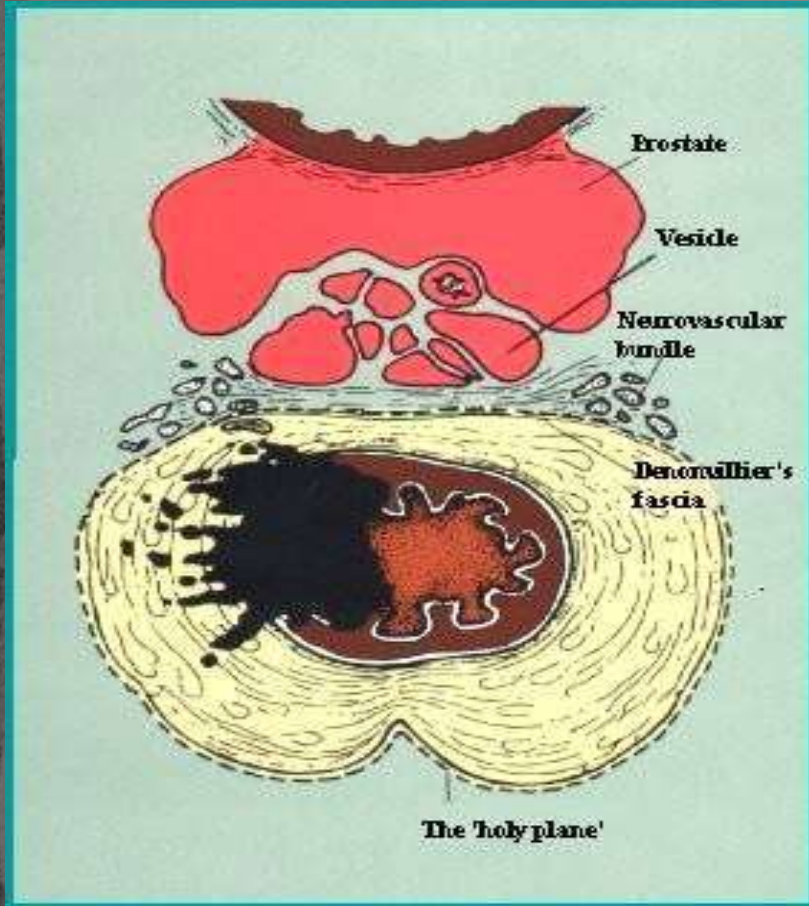


Anterior Resection

- It is a **sphincter saving** operation
- **Approach:** open / laparoscopic / robotic assistance
- Two terms: TME & CRM



TME & CRM



Radiotherapy

- Neoadjuvant ,adjuvant or palliative setting
- Neoadjuvant is **short course** and **long course** chemoradiation
- **Long course** → RT 45-50 Gy for 6 weeks + 1st & last week chemo → 6 weeks interval → surgery (down staging)
- **Short course** → RT 25 Gy for 5 day + 1st & 2nd day chemo → surgery within 7-10 days (sterilize tumour) or, 12 weeks later (down staging)
- Adjuvant is EBRT or IORT/ contact RT

Chemotherapy

- As Neoadjuvant with RT or adjuvant to reduce the risk of disseminated disease
- 5 FU remain the 1st line therapy
- Oxaliplatin & Irinotecan is 2nd line

Targeted Therapy

- Target specific type of cancer cells
- One type stops the growth of new blood vessel into rectal tumour
- second type stops the cancer cells from receiving signal to grow
- less likely to harm normal cells than chemotherapy
- eg, Bivacizumab

Immunotherapy

- Increases the **activity of immune system**
- Improves body's ability to find and destroy cancer cell
- Drugs are called **checkpoint inhibitor**
- **eg: Ipilimumab**

Palliative treatment

- Palliative resection
- Diversion / bypass
- Stenting
- Ablasion
- Palliative radiation