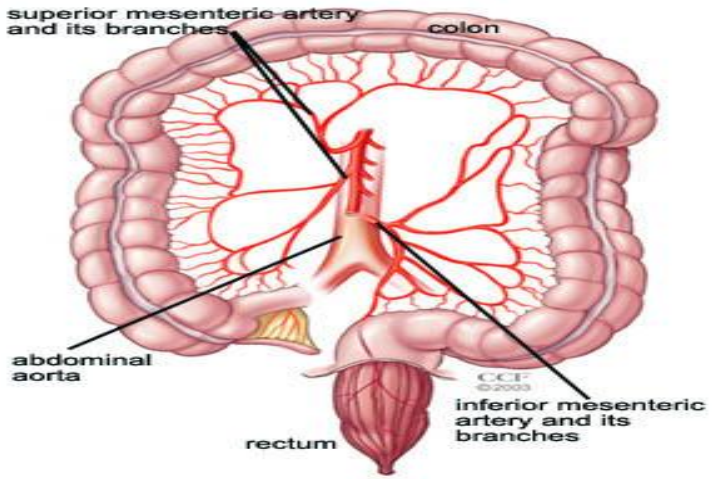
د مشتاق وتوت

Acute small bowel ischaemia

causes



- 1- An embolus from the heart or aorta to the superior mesenteric artery (40-50%) of cases
- 2- thrombosis of underlying atheromatous disease for approximately 25%
- 3- non-occlusive ischaemia due to hypotension complicating myocardial infarction, heart failure, arrhythmias or sudden blood loss (25%).
- 4- Vasculitis or venous occlusion is a rare cause.

pathophysiology

- The pathological spectrum ranges from transient alteration of bowel function to transmural haemorrhagic necrosis and gangrene.

Clinical features

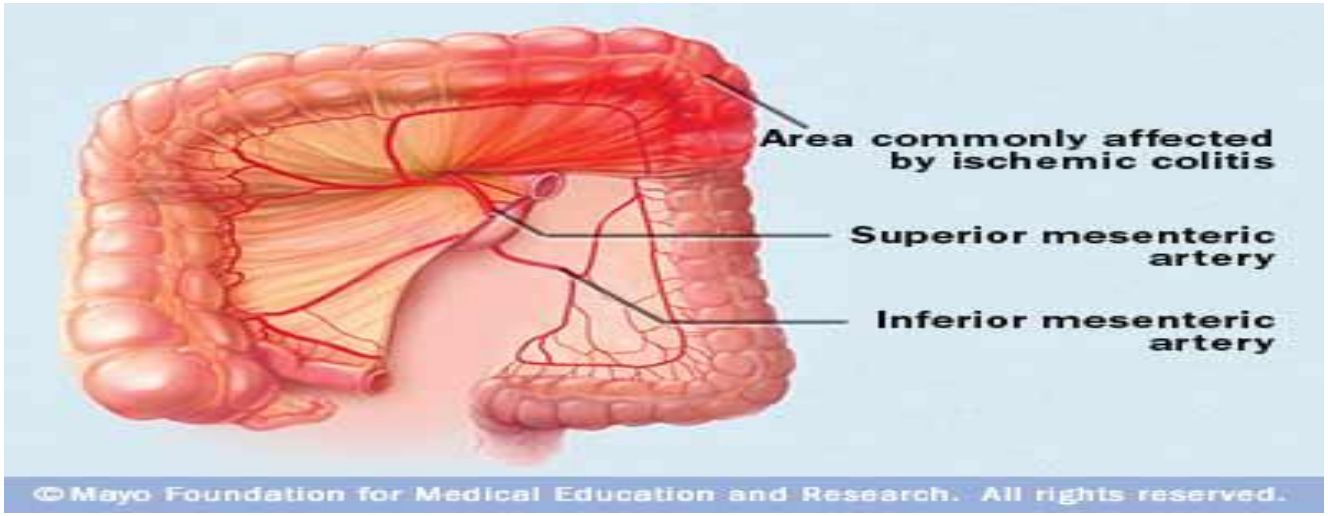
- () Patients usually have evidence of cardiac disease and arrhythmia.
- () Almost all develop abdominal pain
- () In the early stages the physical signs may be a silent, later on distended abdomen or diminished bowel sounds, peritonitis.

management

- () Leucocytosis, metabolic acidosis, hyperphosphataemia and hyperamylasaemia are typical.
- () Plain abdominal X-rays show 'thumb-printing' due to mucosal oedema.
- ()Mesenteric or CT angiography reveals an occluded or narrowed major artery with spasm of arterial arcades,
- () Resuscitation, management of cardiac disease and intravenous antibiotic therapy, followed by laparotomy, are key steps.
- ()In patients at high surgical risk thrombolysis may sometimes be effective.
- () Survivors often have nutritional failure from short bowel syndrome and require intensive nutritional support, sometimes including home parenteral nutrition, as well as anticoagulation.
- () Small bowel transplantation is promising in selected patients.

Acute colonic ischaemia

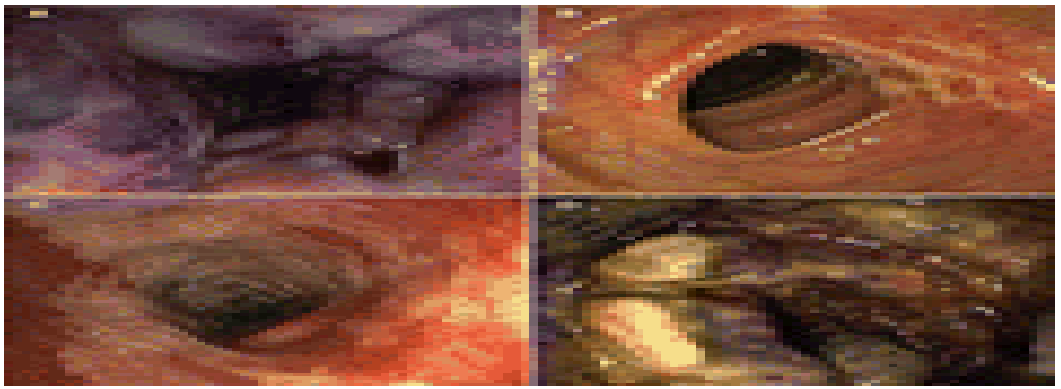
- () The splenic flexure and descending colon have little collateral circulation and lie in 'watershed' areas of arterial supply.
- () The spectrum of injury ranges from reversible transient colitis, colonic stricture, gangrene and fulminant pancolitis.



- () Arterial thromboembolism is usually responsible but colonic ischaemia can also follow severe hypotension, colonic volvulus, strangulated hernia, systemic vasculitis or hypercoagulable states.
- () The patient is usually elderly and presents with sudden onset of cramping left-sided lower abdominal pain and rectal bleeding.
- () Symptoms usually resolve spontaneously over 24-48 hours and healing occurs within 2 weeks.
- () complicated by: a residual fibrous stricture or segment of colitis. A minority develop gangrene and peritonitis.
- () The diagnosis is established by colonoscopy within 48 hours of presentation; otherwise, mucosal ulceration and oedema may have resolved.
- () Resection is required for peritonitis.

Chronic mesenteric ischaemia

- This results from atherosclerotic stenosis affecting at least two of the coeliac axis, superior mesenteric and inferior mesenteric arteries.
- Dull , severe mid- or upper abdominal pain develops about 30 minutes after eating. Patients lose weight because of reluctance to eat, and some experience diarrhoea.
- Physical examination invariably shows evidence of generalised arterial disease.
- Mesenteric angiography & Vascular reconstruction or percutaneous angioplasty is sometimes possible.



Colonic polyps

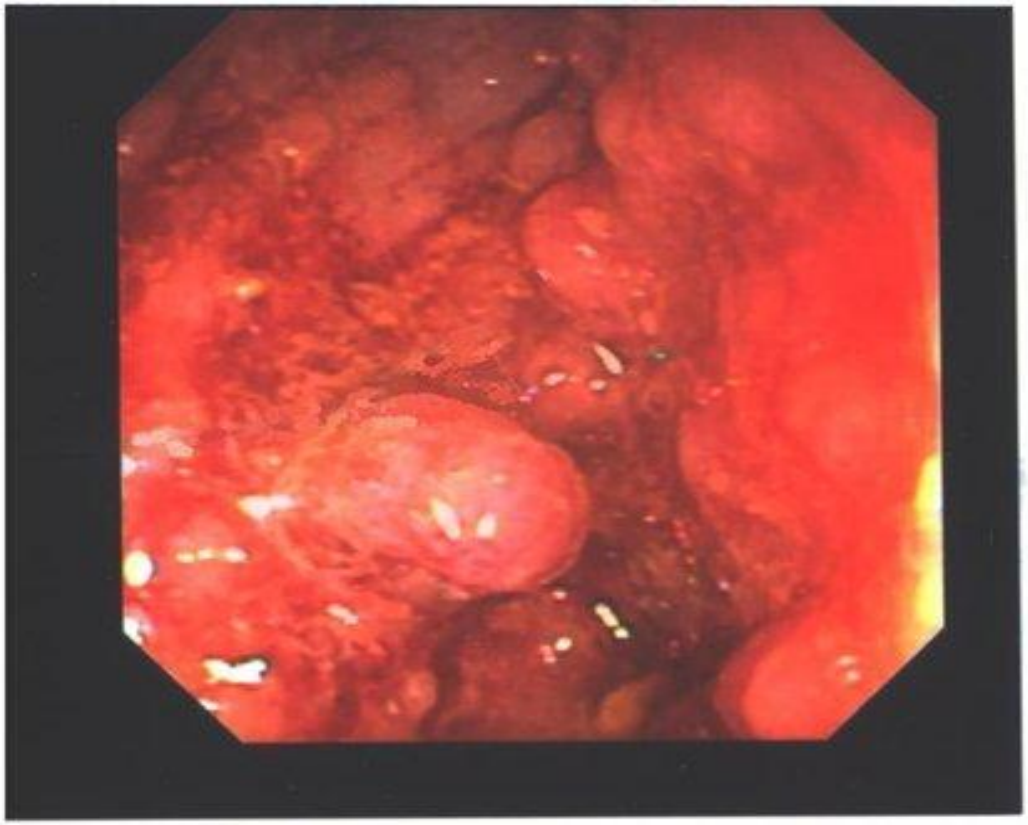
- () neoplastic or non-neoplastic.
- () single or multiple
- () vary from a few millimetres to several centimetres in size.
-

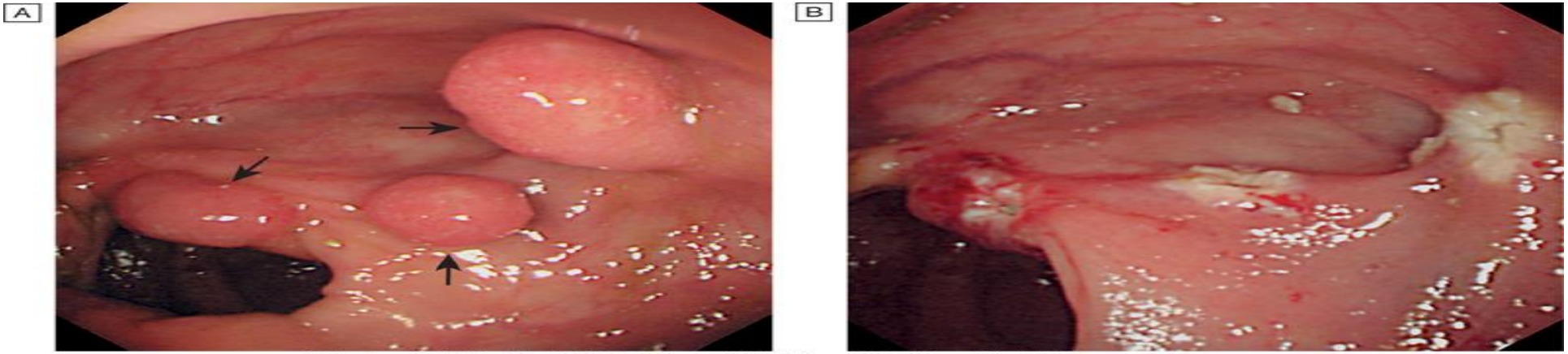
Colorectal adenoma

- ()Theses include hamartomas, metaplastic ('hyperplastic') polyps and inflammatory polyps.
- ()These have no malignant potential
- () the prevalence rises with age; 50% of people over 60 years of age have adenomas, and in half of these the polyps are multiple.
- () They are more common in the rectum and distal colon and are either pedunculated or sessile.
- () Histologically, they are classified as either tubular, villous or tubulovillous, according to the glandular architecture.
- () Villous adenomas sometimes secrete large amounts of mucus, causing diarrhoea and hypokalaemia.

() Risk factors for malignant change in colonic polyps:

- Large size (> 2 cm)
- Villous architecture
- Multiple polyps
- Dysplasia





- () Colonoscopic polypectomy should be carried as this considerably reduces subsequent colorectal cancer risk.
- () Very large or sessile polyps can sometimes be removed safely by endoscopic mucosal resection (EMR) but will otherwise require surgery.
- () Once all polyps have been removed, patients should undergo surveillance colonoscopy at 3-5-year intervals, as new polyps develop in 50% of patients.

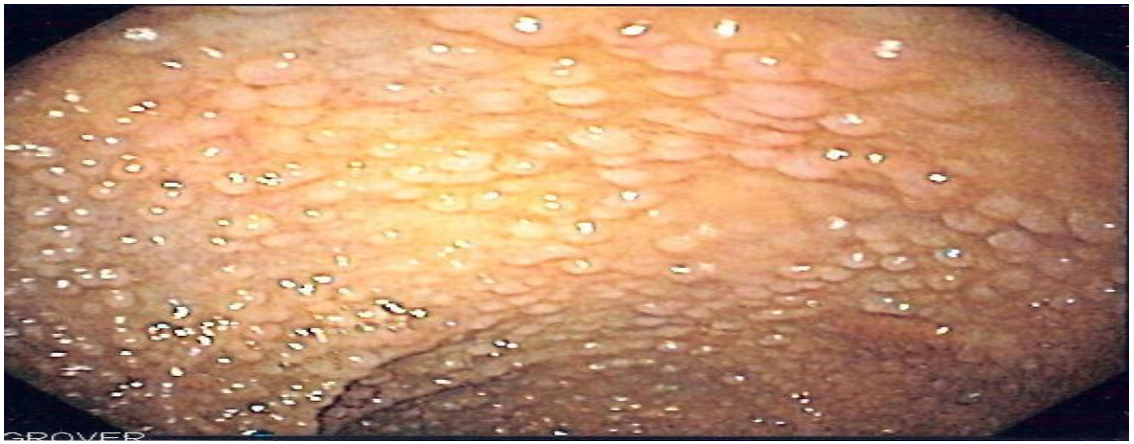
Familial adenomatous polyposis (FAP)

- ()uncommon autosomal dominant disorder affecting 1 in 13 000 of the population and accounting for 1% of all colorectal cancer.
- () Around 20% of cases arise as new mutations and have no family history.
- ()Hundreds to thousands of adenomatous colonic polyps will develop in 80% of patients by age 15

- () In those affected, cancer will develop within 10-15 years of the appearance of adenomas and 90% of patients will develop colorectal cancer by the age of 50 years.

Extraintestinal features of familial adenomatous polyposis

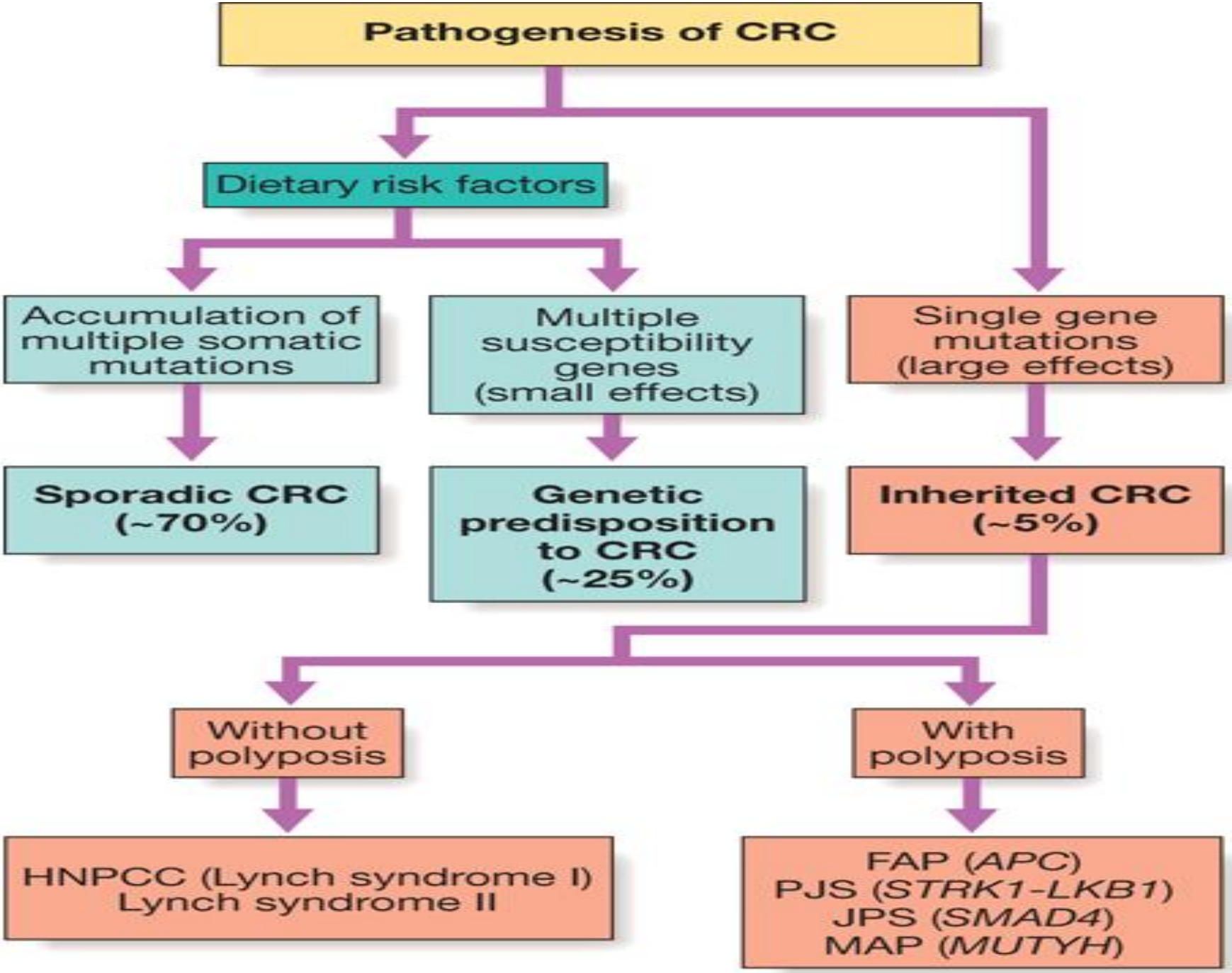
- Congenital hypertrophy of the retinal pigment epithelium (CHRPE, 70-80%)
- Epidermoid cysts (extremities, face, scalp) (50%)
- Benign osteomas, especially skull and angle of mandible* (50-90%)
- Dental abnormalities (15-25%)*
- Desmoid tumours (10-15%)
- Other malignancies (brain, thyroid, liver, 1-3%)



- () In newly diagnosed cases with new mutations, genetic testing confirms the diagnosis, and all first-degree relatives should also undergo testing .
- () In families with known FAP, at-risk family members should undergo direct mutation testing at 13-14 years of age. This is less invasive than regular sigmoidoscopy, which is reserved for those known to have the mutation.
- () Affected individuals should undergo colectomy after school or college education has been completed.
- () The operation of choice is total proctocolectomy with ileal pouch-anal anastomosis.
- () Periodic upper gastrointestinal endoscopy is recommended to detect duodenal adenomas.

Colorectal cancer

- () Although relatively rare in the developing world, colorectal cancer is the second most common internal malignancy and the second leading cause of cancer deaths in Western countries.
- () The condition becomes increasingly common over the age of 50



Dietary risk factors for colorectal cancer development

- *()Increased risk*
- Red meat
- Saturated animal fat:
- *()Decreased risk*
- Dietary fiber
- Fruit and vegetables
- Calcium
- Folic acid
- Omega-3 fatty acids

Non-dietary risk factors in colorectal cancer

1- Colorectal adenomas

2-Long-standing extensive ulcerative colitis or Crohn's colitis especially if associated with primary sclerosing cholangitis (PSC)

3-Ureterosigmoidostomy

4-Acromegaly

5-Pelvic radiotherapy

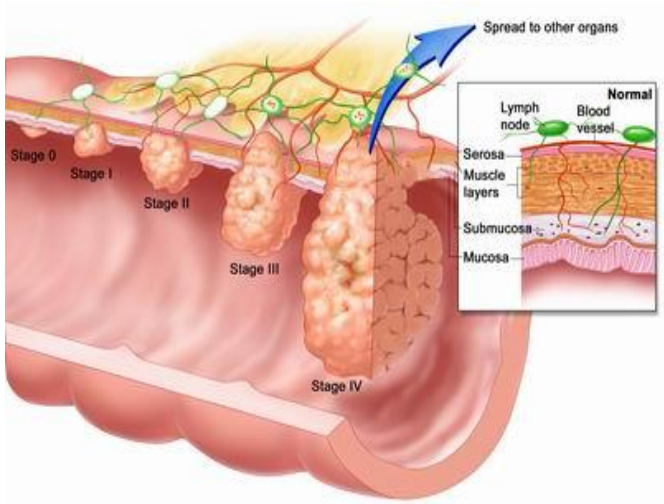
6- Obesity and sedentary lifestyle.

7- Smoking (relative risk 1.5-3.0)

8- Alcohol (weak association)

9- Cholecystectomy

10- Type 2 diabetes (hyperinsulinaemia)



11- Use of aspirin or NSAIDs (COX-2 inhibition) and perhaps statins associated with *reduced* risk

Clinical features

() In tumours of the left colon, •
fresh rectal bleeding is common and obstruction occurs early. •

() Tumours of the right colon present with anaemia from occult • bleeding or with altered bowel habit, but obstruction is a late feature.

() Colicky lower abdominal pain is present in two-thirds of • patients and rectal bleeding occurs in 50%.

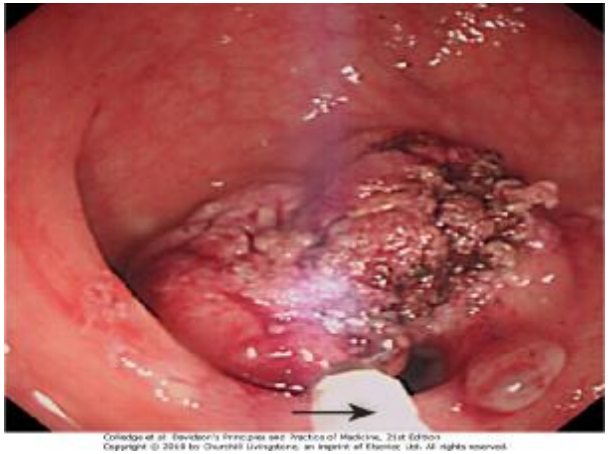
() A minority present with features of either obstruction or • perforation, leading to peritonitis, localised abscess or fistula formation.

() Carcinoma of the rectum usually causes early bleeding, mucus • discharge or a feeling of incomplete emptying.

() Between 10 and 20% of patients present with iron deficiency • anaemia or weight loss.

()On examination there may be a palpable mass, signs of anaemia • or hepatomegaly from metastases. Low rectal tumours may be palpable on digital examination.

Investigations



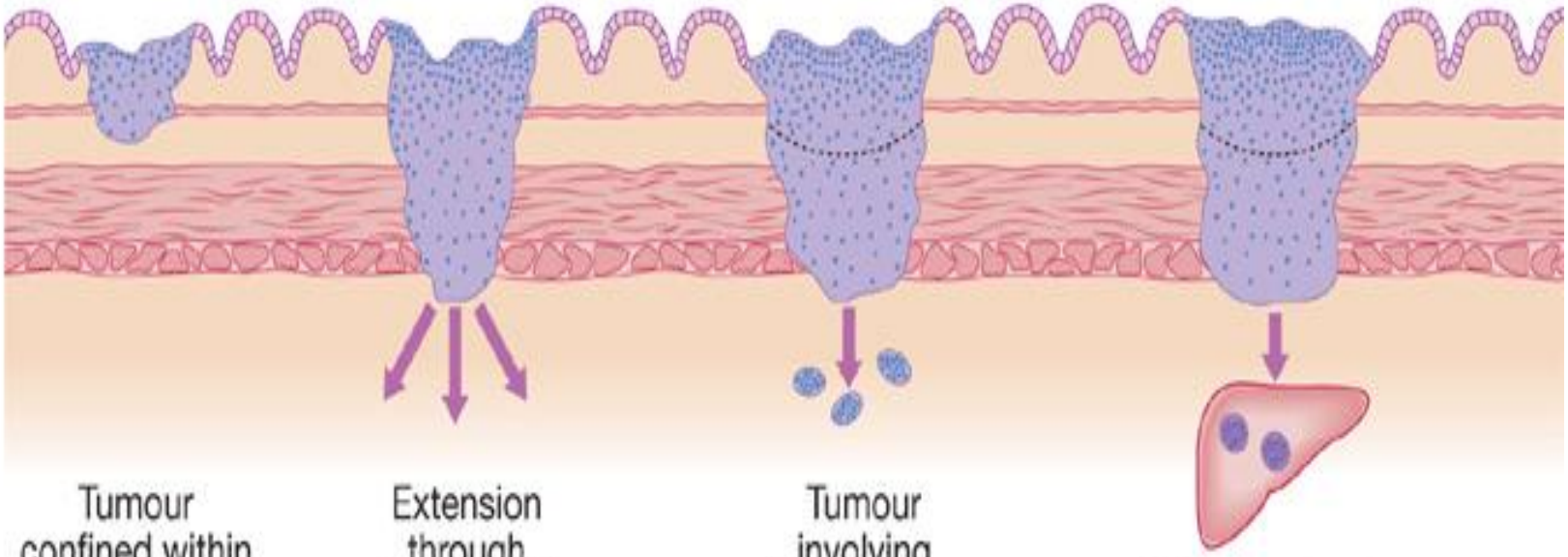
() Colonoscopy : is the investigation of choice, lesions can be biopsied and polyps removed.

() CT colonography ('virtual colonoscopy') is a sensitive non-invasive technique for diagnosing tumours and polyps greater than 1 cm that can be used if colonoscopy is incomplete or high-risk.

() CT is valuable for detecting hepatic metastases.

() A proportion of patients have raised serum carcinoembryonic antigen (CEA) concentrations but this is variable and so of little use in diagnosis. Measurements of CEA are valuable, however, during follow-up and can help to detect early recurrence.

Staging & survival in colorectal cancer



Dukes stage	A	B	C	'D'
Definition	Tumour confined within bowel wall	Extension through bowel wall	Tumour involving lymph nodes	Distant metastases
Prevalence at diagnosis (%)	10	35	30	25
5-year survival rate (%)	> 90	65	30–35	< 5

Colledge et al: Davidson's Principles and Practice of Medicine, 21st Edition

Management

- *1- Surgery*
- The tumour is removed, along with adequate resection margins and pericolic lymph nodes.
- Carcinomas within 2 cm of the anal verge may require abdominoperineal resection and formation of a colostomy.
- Total mesorectal excision (TME) reduces recurrence rates and increases survival in rectal cancer.
- Post-operatively, patients should undergo colonoscopy after 6-12 months and periodically thereafter to search for local recurrence or development of new 'metachronous' lesions, which occur in 6% of cases.

Adjuvant therapy

- Two-thirds of patients have lymph node or
- distant spread (Dukes stage C) at presentation
- , therefore, beyond cure with surgery alone.
- Most recurrences are within 3 years of diagnosis.
- Adjuvant chemotherapy with 5-fluorouracil and folinic acid (to reduce toxicity) for 6 months improves both disease-free and overall survival in patients with Dukes C colon cancer by around 4-13%.
- Pre-operative radiotherapy can be given to patients with large, fixed rectal cancers to 'down-stage' the tumour, making it resectable and reducing local recurrence.
- In some countries, patients with metastatic disease are treated with monoclonal antibodies using bevacizumab or cetuximab either alone or with chemotherapeutic agents such as irinotecan.
- Endoscopic laser therapy or insertion of an expandable metal stent can be used to relieve obstruction.
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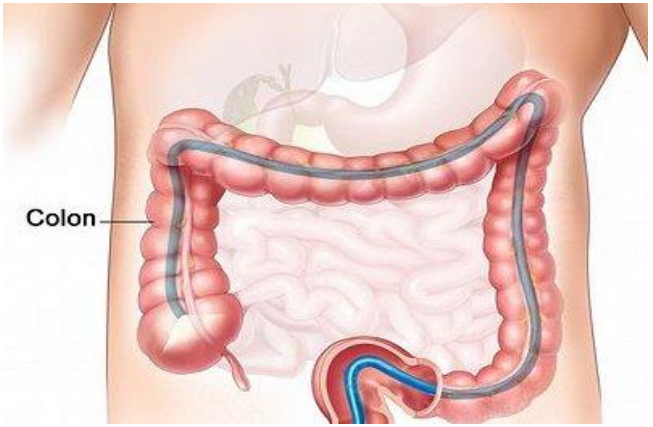
Prevention and screening



1- Widespread screening by regular *faecal occult blood (FOB) testing* reduces colorectal cancer mortality and increases the proportion of early cancers detected. FOB screening is recommended after the age of 50 years.

2- Colonoscopy remains the gold standard but is expensive and carries risks; many countries lack the resources to offer this form of screening.

3- Flexible sigmoidoscopy is an alternative option and has been shown to reduce overall colorectal cancer mortality by approximately 35%.

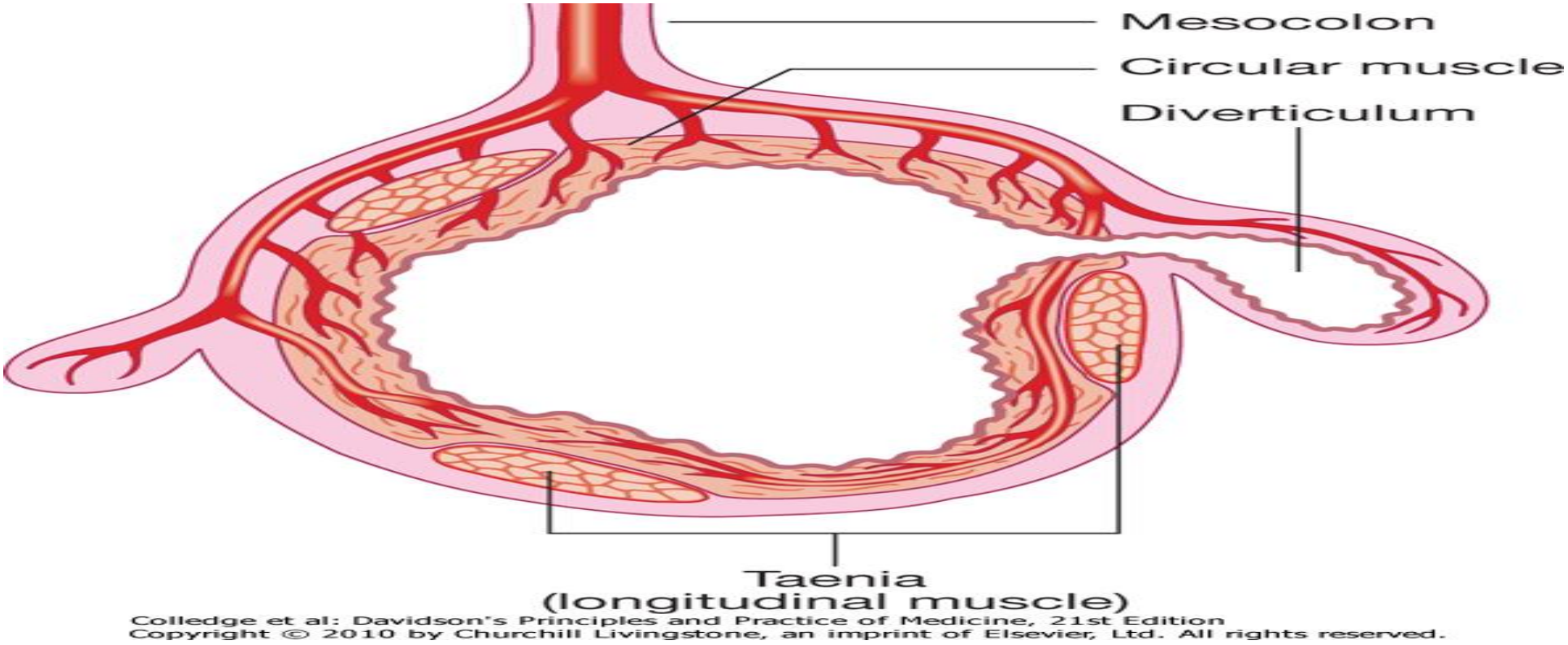
4- Screening for high-risk patients by *molecular genetic analysis* is an exciting prospect but is not yet available.

Diverticulosis

() Diverticula are acquired and are most common in the sigmoid and descending colon of middle-aged people.

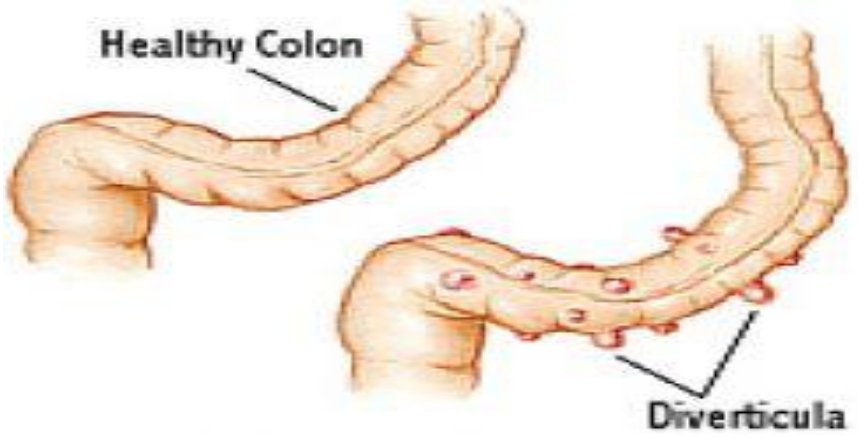
() Asymptomatic diverticula (diverticulosis) are present in over 50% of people above the age of 70. Symptomatic diverticular disease supervenes in 10-25% of cases while complicated diverticulosis (acute diverticulitis, pericolic abscess, bleeding, perforation or stricture) is uncommon.

- The colonic wall is weak between the taeniae.
- The blood vessels that supply the colon pierce the circular muscle and weaken it further by forming tunnels.
- Diverticula usually emerge through these points of least resistance.



Clinical features

- Colicky pain is usually suprapubic or felt in the left iliac fossa. The sigmoid colon may be palpable and, in attacks of diverticulitis, there is local tenderness, guarding, rigidity ('left-sided appendicitis') and sometimes a palpable mass.
- During these episodes there may also be diarrhoea, rectal bleeding or fever.
- Diverticular disease is complicated by perforation, pericolic abscess, fistula formation (usually colovesical) and acute rectal bleeding.



Management

- Diverticulosis which is asymptomatic and discovered coincidentally requires no treatment.
- Constipation can be relieved by a high-fibre diet with or without a bulking laxative (ispaghula husk, 1-2 sachets daily) taken with plenty of fluids.
- Stimulants should be avoided.
- Antispasmodics may sometimes help.
- An acute attack of diverticulitis requires 7 days of metronidazole (400 mg 8-hourly orally), along with either a cephalosporin or ampicillin (500 mg 6-hourly orally). Severe cases require intravenous fluids, intravenous antibiotics, analgesia and nasogastric suction.
- emergency surgery is reserved for severe haemorrhage or perforation.