GIT Pathology

Lec.5

Dr Methaq Mueen

Tumors of the small and large intestine

- Tumors of the small intestine are generally **rare** specially the epithelial tumors.
- The most common malignant tumor is lymphoma.
- While the epithelial tumors of the large intestine are **common** which are:

1- Benign tumors (adenomas)

2- Malignant tumors (adenocarcinoma)

Tumors of the large intestine:

Polyp: is a tumor mass that protrudes into the lumen of the gut and are of two types:

1- Non neoplastic polyps

- Results from inflammation with abnormal mucosal maturation
- They represent **90%** of all epithelial polyps
- They **don't have a malignant** potential
- There are two main types:

Type	Comments
Non-neoplastic polyps	
Hyperplastic polyp	No clinical significance
Inflammatory polyps:	
Lymphoid polyp	Most common site is the rectal mucosa; may be a reaction to local irritation
Inflammatory pseudopolyp	Associated with ulcerative colitis and other inflammatory diseases of the colon; consists of granulation tissue and residual and regenerating mucosa
Hamartomatous polyps:	
Juvenile polyp	Occurs most frequently in children
Peutz-Jeghers polyp	Associated with Peutz-Jeghers syndrome

Neoplastic polyps	
Tubular adenoma	Benign but may undergo malignant change; often multiple; hereditary multiple polyposis syndromes associated with greatly increased risk of malignancy
Tubulovillous adenoma	Morphologically resembles tubular adenoma with additional features similar to those of villous adenoma; greater malignant potential than tubular adenoma
Villous adenoma	Large sessile tumor with velvety surface comprised of finger-like villi; high potential for malignant change

a- Hyperplastic polyp

* They are the most common polyps of the colon &rectum.
* It is small in size < 5mm
* It is nipple shape, hemispheric protrusion
* They are multiple
* Discovered at the age of **50s-60s**
* Located mainly at the rectosigmoid region

b- juvenile polyp

* Size is about 1-3 cm
- Usually single
* Mainly in **children**
*Located in the rectum
*Presented with bleeding per retum

2- Neoplastic (adenomatous polyp)

Results from epithelial proliferation and dysplasia

They are a slowly growing tumors and they are called ADENOMAS

They have a **malignant potentials** and can change into carcinoma

Divided into three types according to the histological features :

*Tubular

* Villous

* Tubulvillous

•

a- Tubular adenoma(tubular glands)

*single or multiple

* 2.5 cm

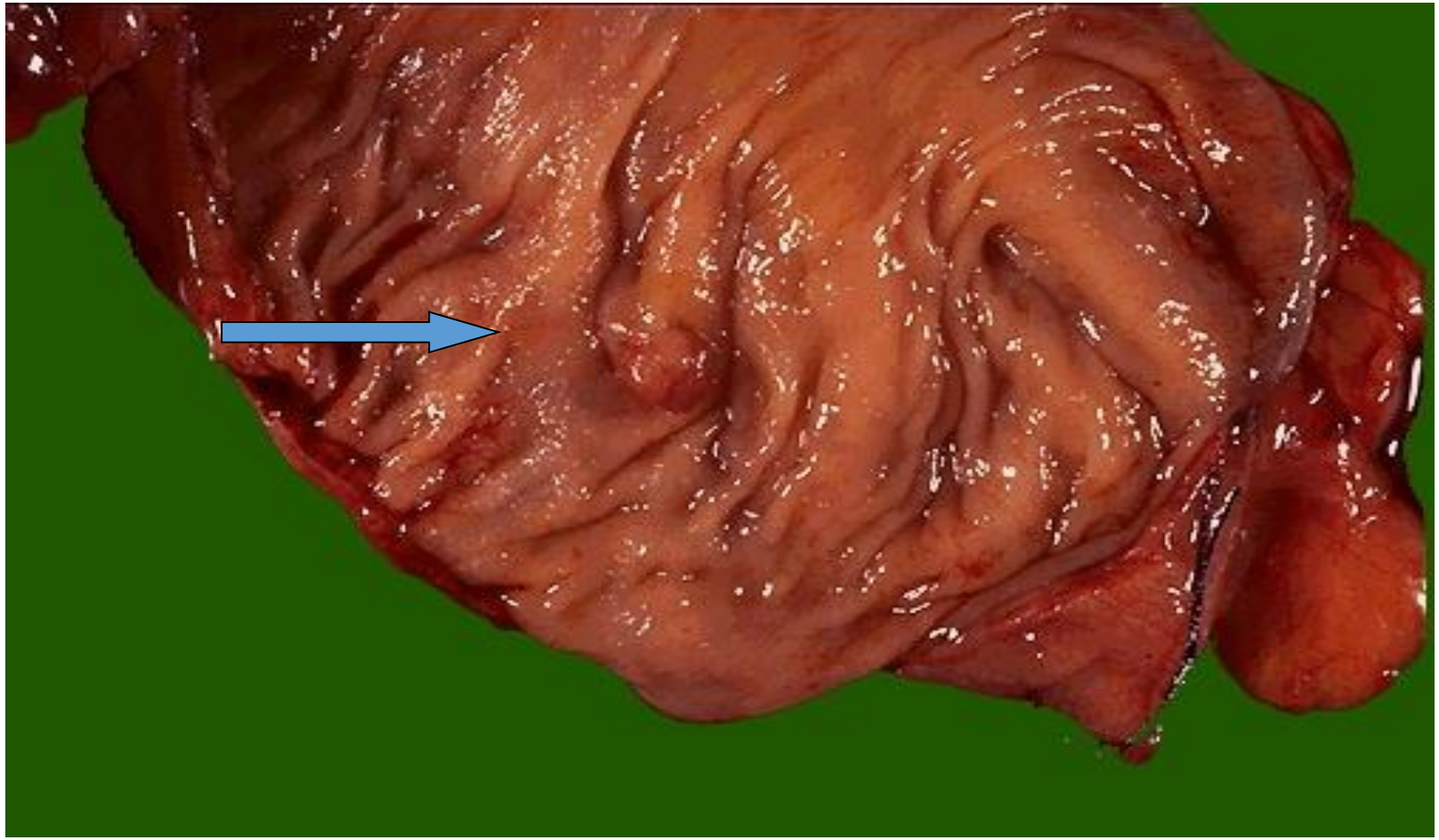
*it has a **stalk** or pedicle

*usually at the rectosigmoid area

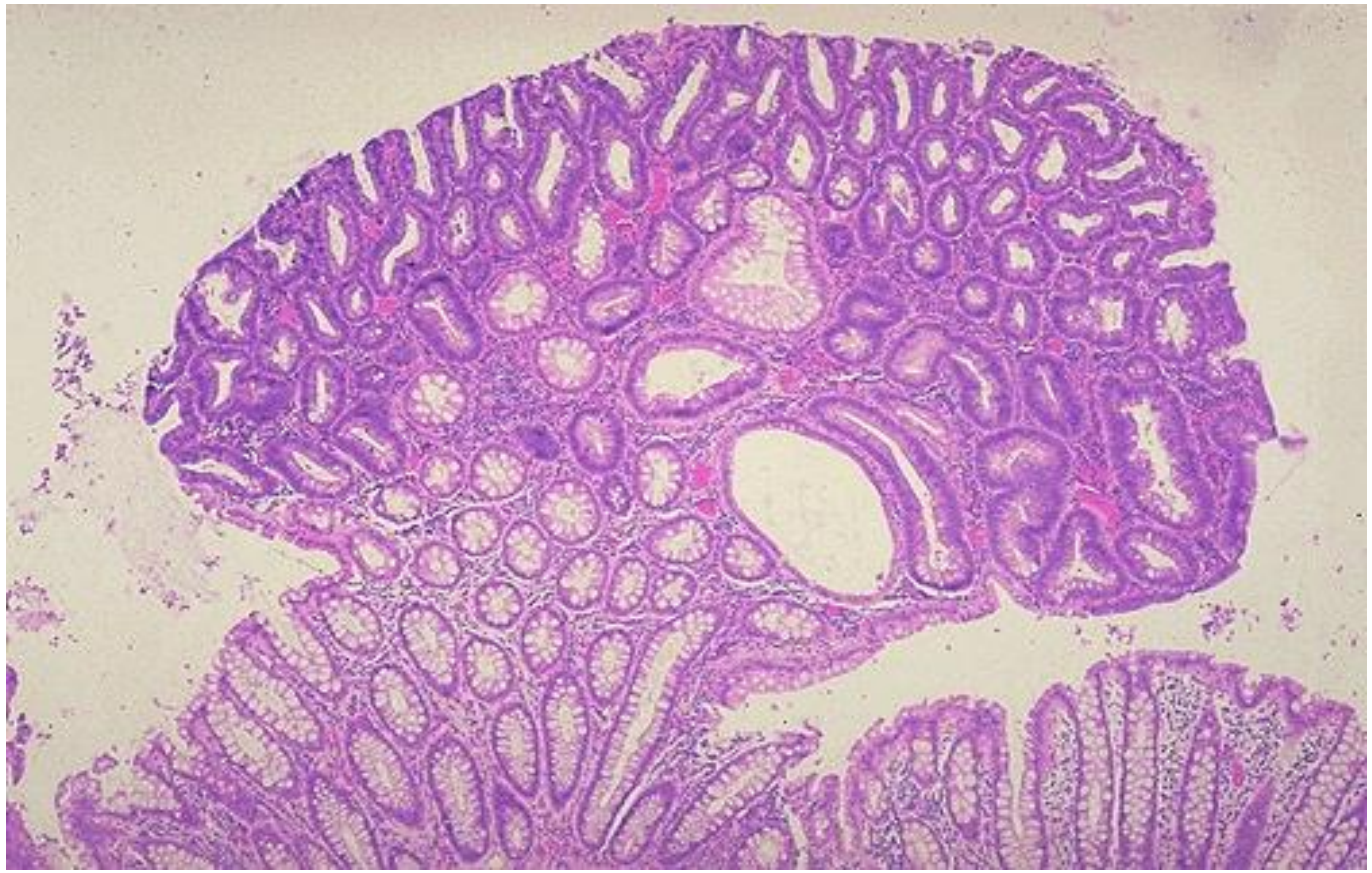
*mic: proliferation of the glands

* Malignant transformation is rare in those less than 1 cm

Tubular adenoma



Mic.



b- Villous adenoma (villus projections)

*Usually single

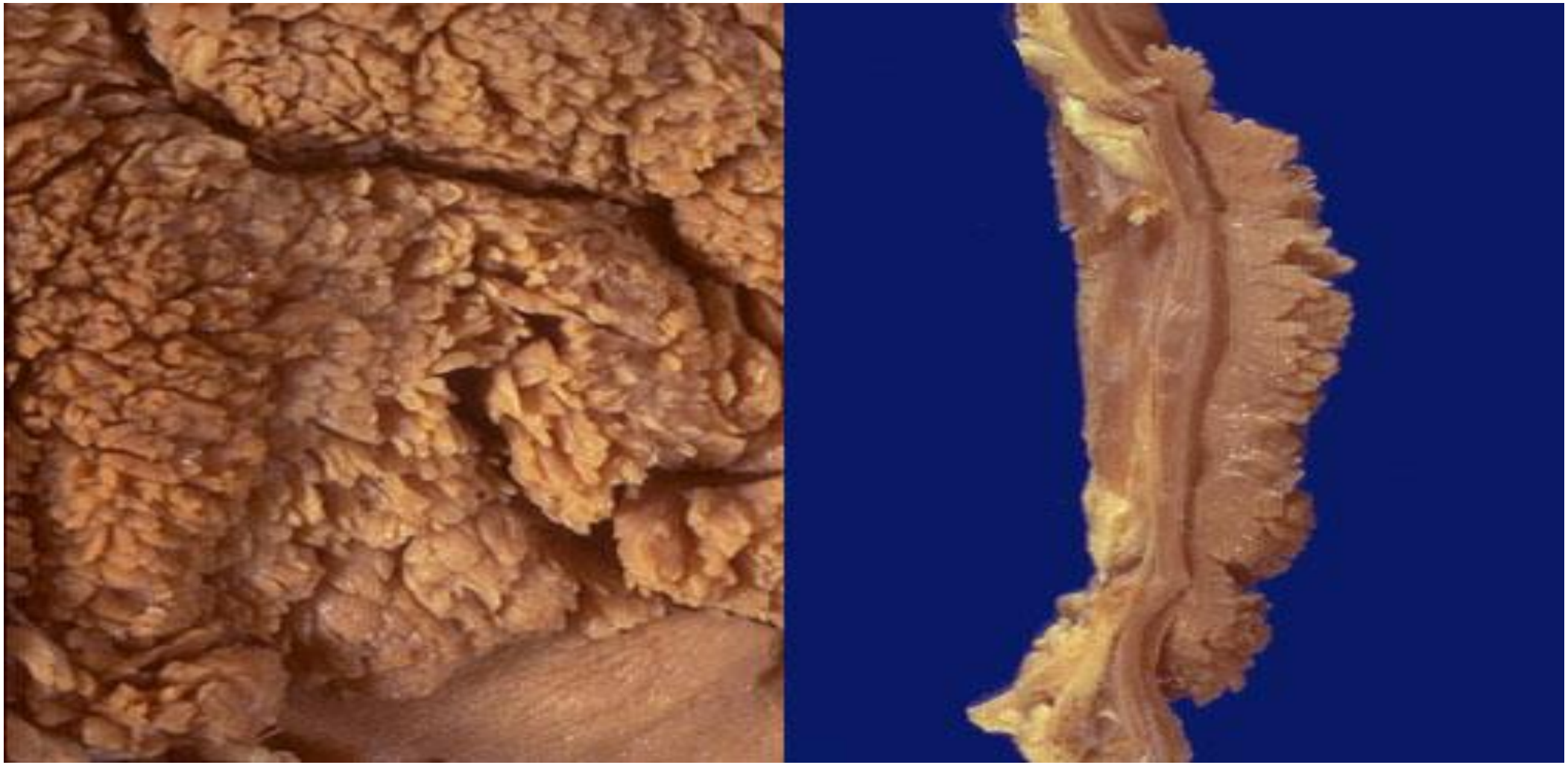
*Large in size 10 cm

* It does not have a pedicle (**sessile**) with broad base projecting above the surface mucosa

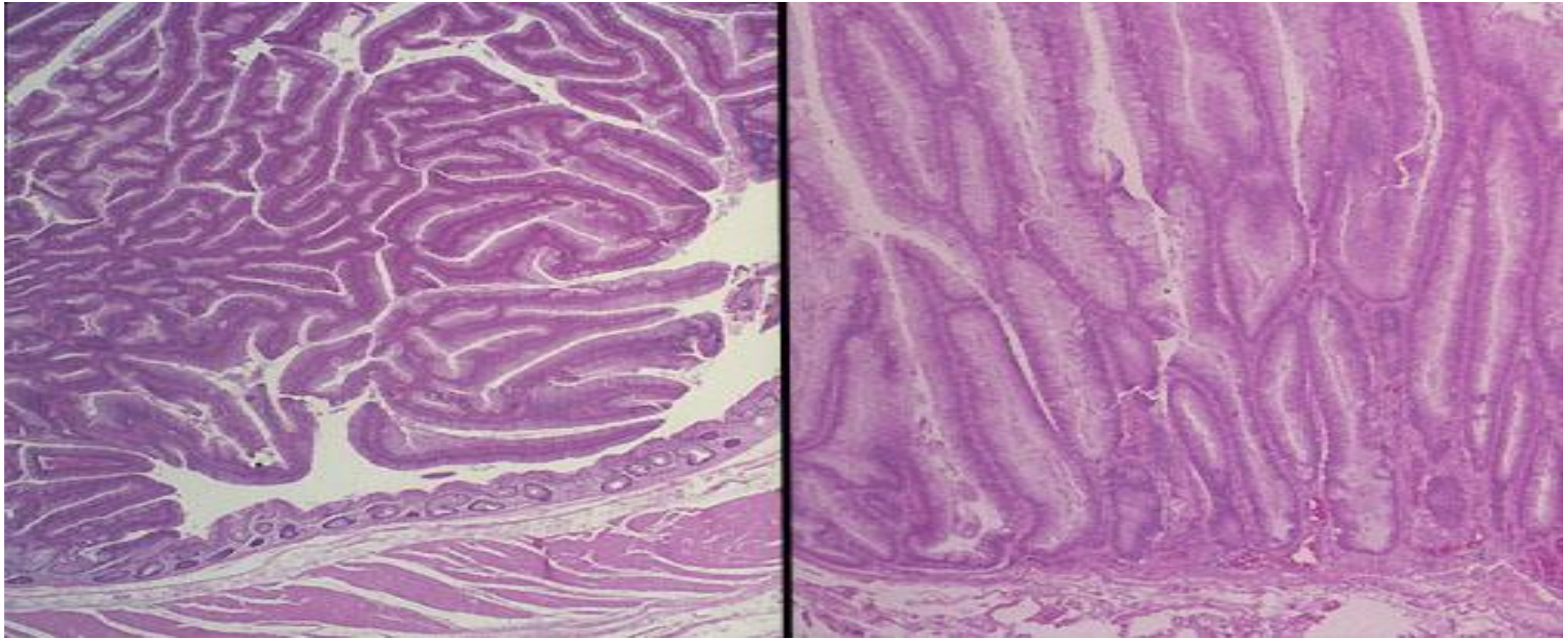
* Common in the rectum and rectosigmoid

* Mic: finger like projections **(papillae)**

Villous adenoma



Mic.



c- Tubulovillous adenoma

It contains both elements

Question ???

Does colonic adenomas change into malignancy??and what are the factors affecting it's conversion??

Answer ???

Yes it can change into malignancy, according to:

1- Size of the adenoma, the larger the size, the greater the risk.

2- Histological type, the villous carries more risk than tubular.

3- Number, increase in no. ---increase the risk

4- Dysplasia, presence of severe dysplasia carries high risk.

Familial adenomatous polyposis (F.A.P)

*Is an autosomal dominant disorder. Its importance lies in its high risk of malignant transformation.

*It is characterized by the presence of innumerable adenomatous polyps which may reach 500-2500 polyp and we need the presence of at least 100 polyp to diagnose it .

* The risk to develop colorectal carcinoma is 100%

* Mic:

Mostly tubular adenoma type

* Treatment:

Prophylactic colectomy

Familial polyposis coli

Colorectal carcinoma

98% of all cancers of the large intestine are adenocarcinomas.

Colorectal carcinoma considered the 2nd most common cancer.

It is common in USA, Canada and low in Asia and Africa.

Age : 60-70 years

Etiology and pathogenesis:

1- Premalignant conditions

adenomas (adenomatous polyps)

ulcerative colitis

2- Genetic factors

familial adenomatous polyposis caries 100% risk of malignancy

3- Environmental factors specially dietary factors

Fat intake :high fat intake

Carbohydrate :high intake

Fibers : low fiber diet is associated with high risk because it decrease the stool bulk---delay in it’s passage--- more contact of the carcinogens in the stool and exposure to the mucosa

Vitamins : low intake of vit A, C,E

Gross:

50% occur at the rectosigmoid area and they may appear as:

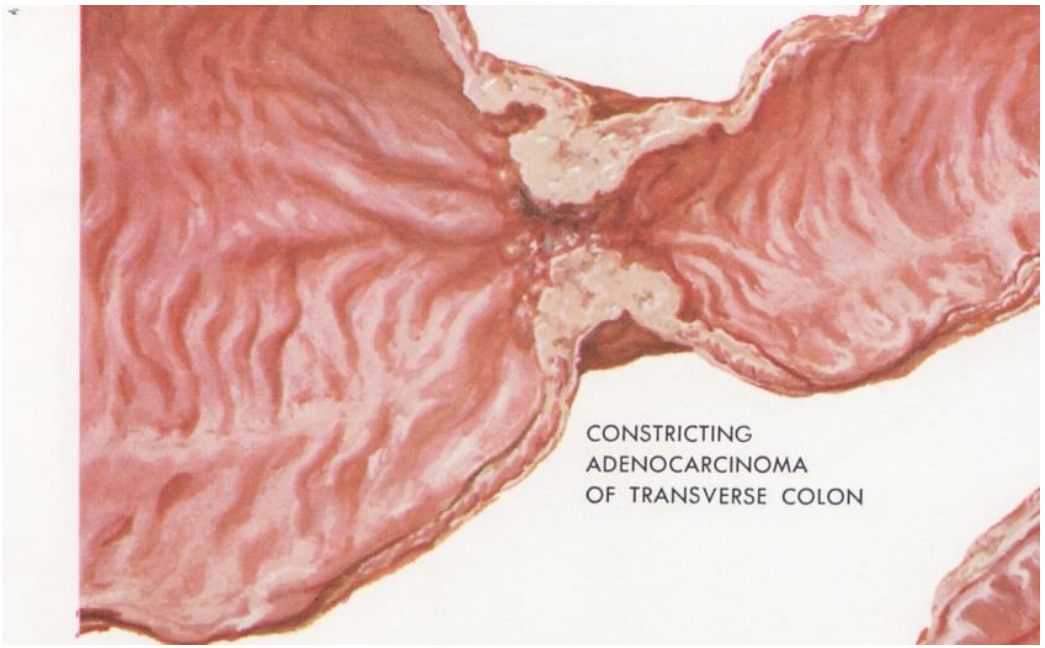
1- Polypoid mass (fungating) or cauliflower which is more common and tend to occur on the right side (cecal)

2- Annular ,encircling lesions which produce ring“Napkin-ring” constrictions of the bowel which tend to involve the left side (rectosigmoid)

Carcinoma colon

Exophytic type

Napkin ring type



Napkin rings

Carcinoma colon

Exophytic type

Napkin ring type

Microscopically:

Adenocarcinoma ranging from well- poorly differentiated carcinoma.

Clinical features:

asymptomatic

change in bowel motion

bleeding per rectum

intestinal obstruction

other systemic manifestations e.g anemia ,weight loss…..etc

Clinical Features

The underlying cause of iron deficiency anemia in an older man or postmenopausal woman is GI cancer until proven otherwise

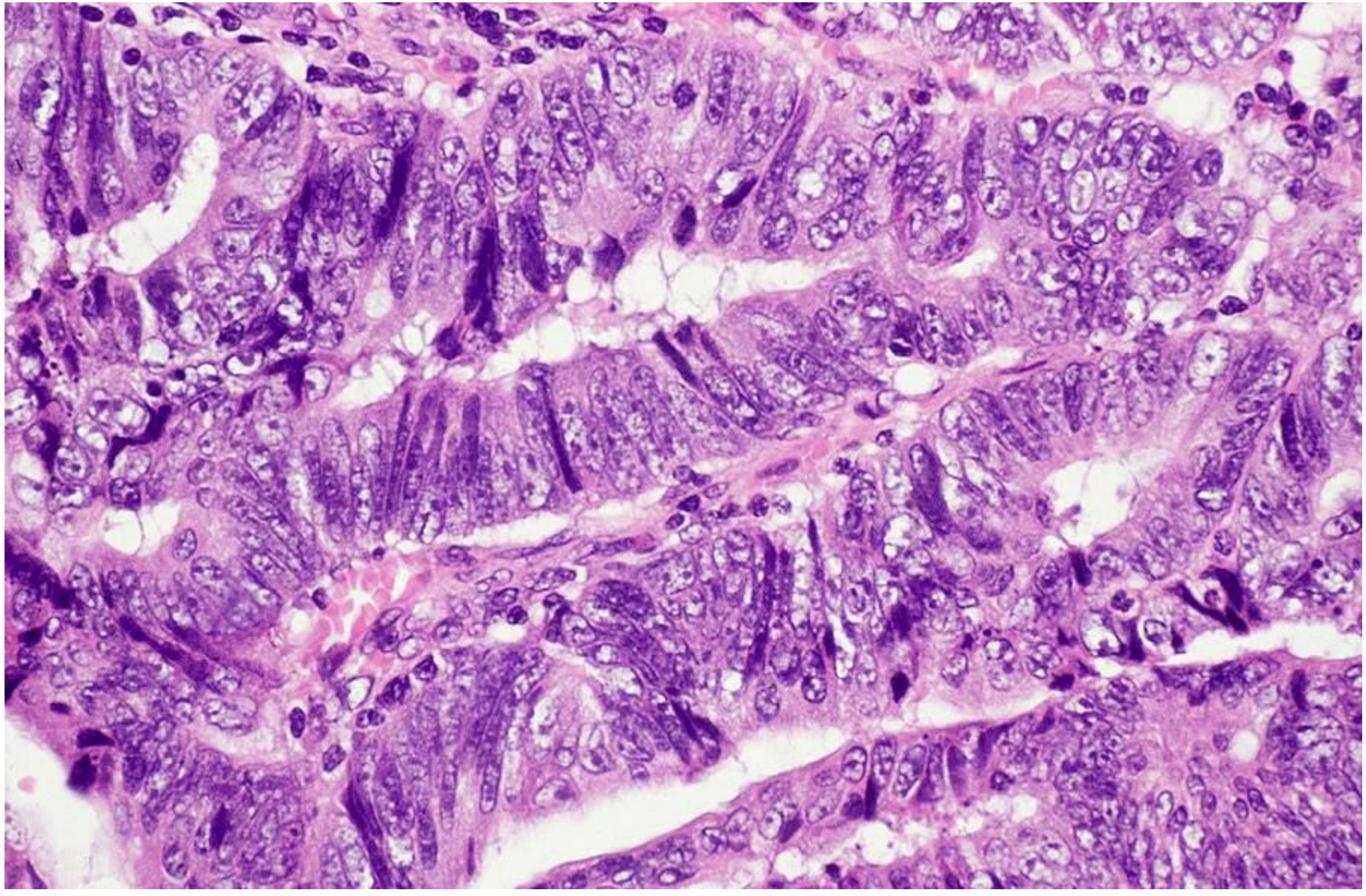
The two most important Prognostic Factors

Depth of invasion

Invasion into the muscularis propria confers significantly reduced survival

Lymph node metastases

Morphology – Microscopic features



Spread:

1- local

2- lymphatic

3- hematogenous

Prognosis:

The most important is the tumor stage at time of diagnosis.

In 1937 Dukes proposed a staging system.

In 1954 Astler and Coller created another staging system with further subdivisions.

The staging system which is recommended nowadays is TNM system(8th edition)2018

T(Tumor):

Tx:primary tumor can not be assessed

T0: no evidence of primary tumor

Tis: carcinoma in situ, intramucosal carcinoma(involvement of LP with no extension through muscularis mucosae)

T1:tumor invades submucosa

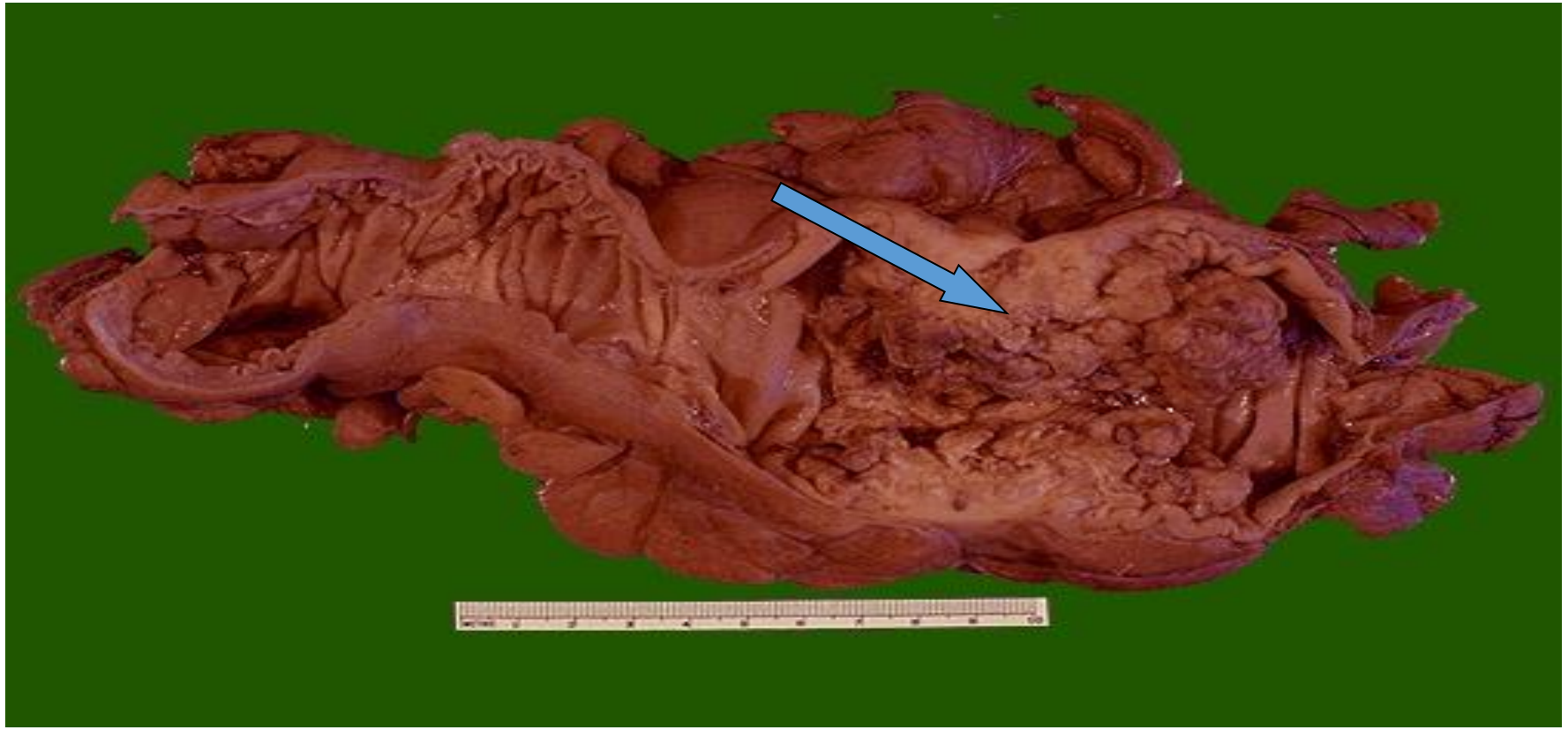
T2: tumor invades muscularis propria

T3:tumor invades muscularis propriainto pericolorectal tissues

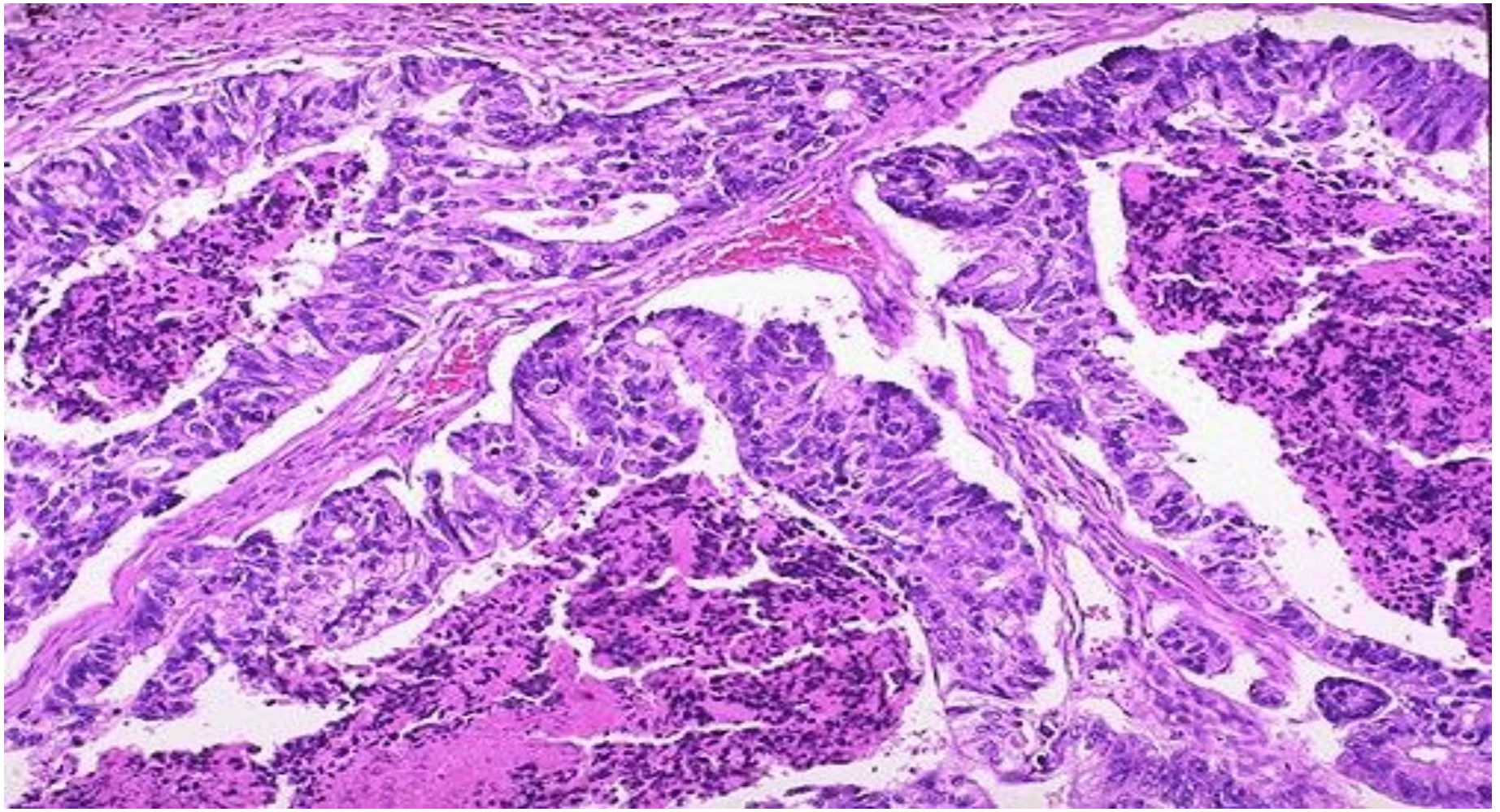
T4:tumor invade visceral peritoneum or adjacent organs.

- **N**
- **NX**: regional LN can not be assessed
- **N0**: no regional LN metastasis
- **N1:**metastasis in 1-3 regional LN
- **N2:** metastasis in 4 or more regional LN
- **M:**
- **M0:** no distnt metastasis by imaging
- **M1:** distant metastasis present

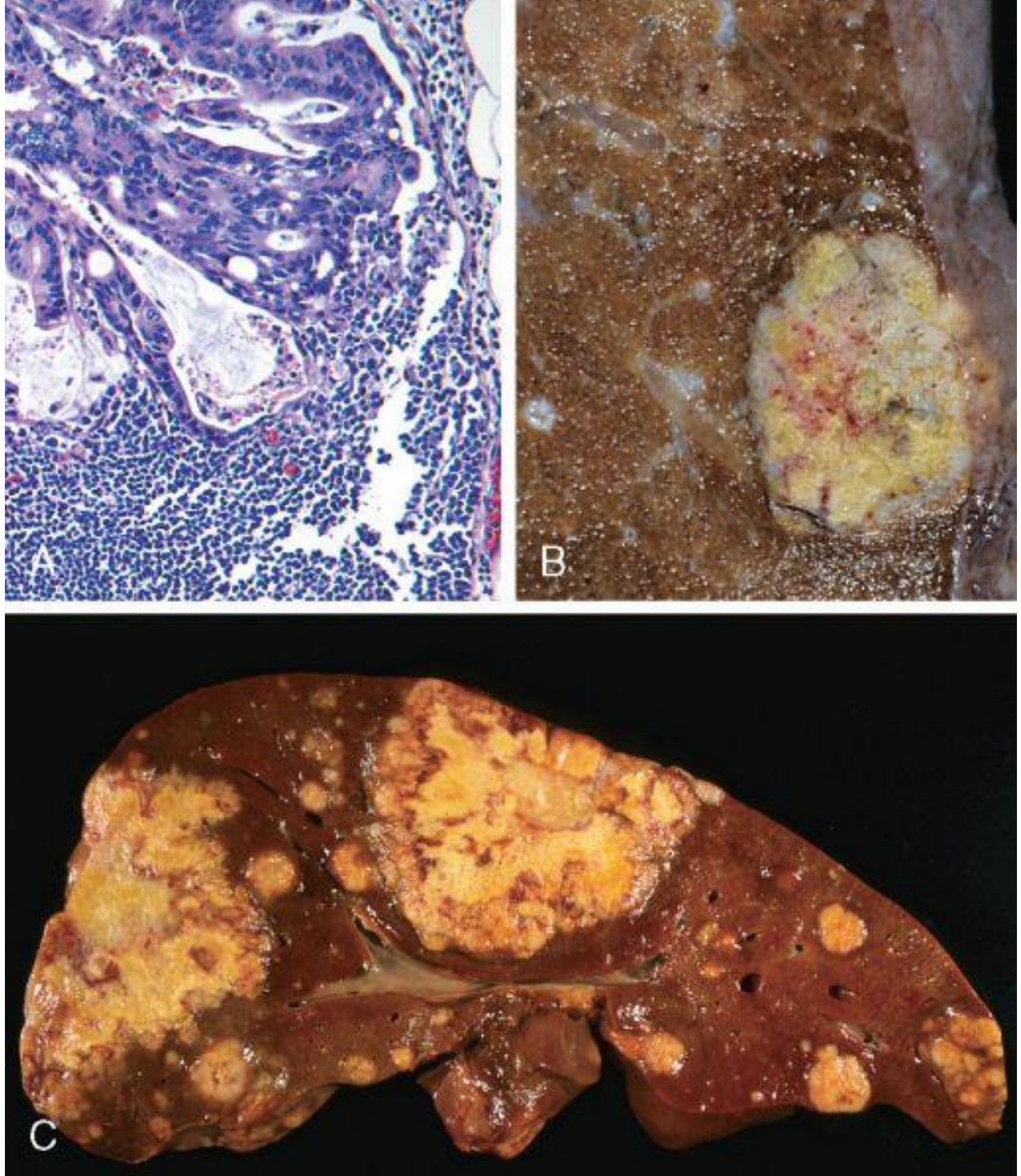
Exophytic



Mic . Medium power



liver metastasis



Metastatic colorectal carcinoma

Acute Appendicitis

- Most common in adolescents & young adults
- Males
- DDs:
  - Mesenteric lymphadenitis
  - Acute salpingitis
  - Ectopic pregnancy
  - Mittelschmerz: (German: "middle pain") is a medical term for "ovulation pain" or "midcycle pain".
  - Meckel diverticulitis

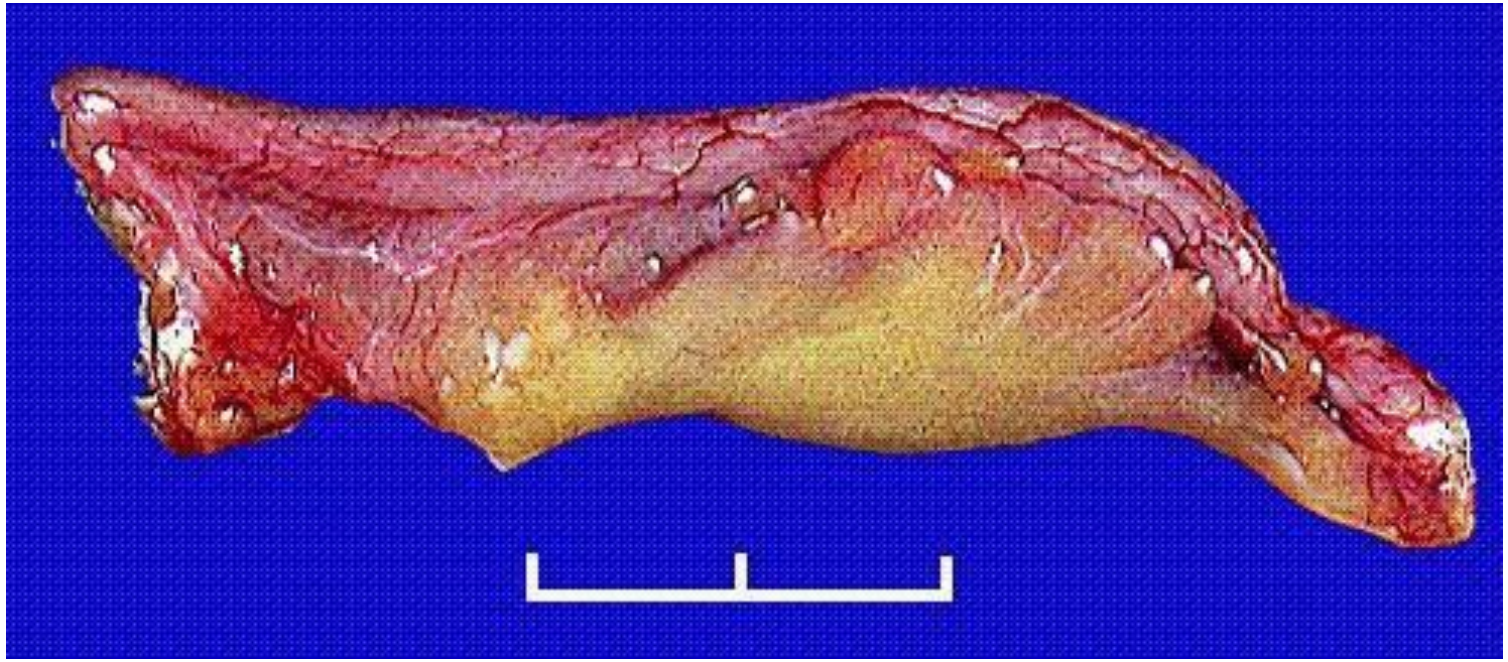
Pathogenesis:

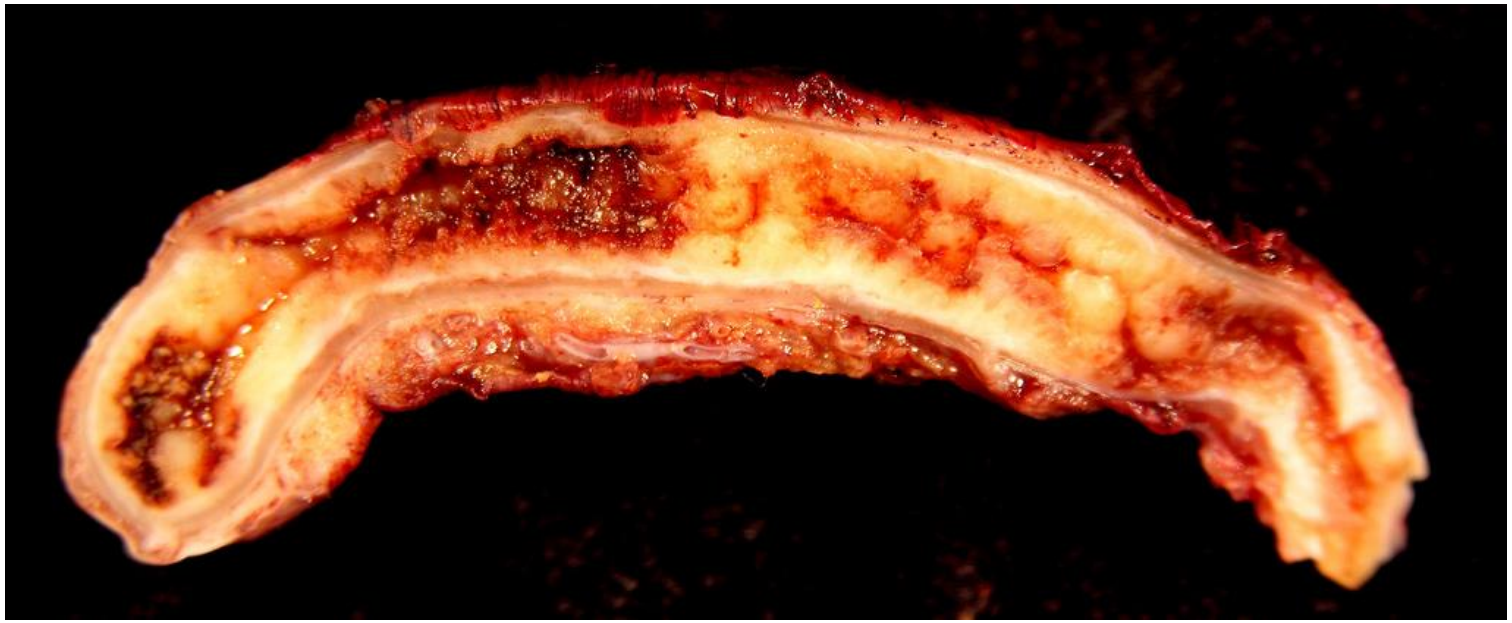
- Progressive increases in intraluminal pressure that compromise venous outflow
  - *Fecalith*
  - tumor
  - Mass of worms
- Ischemic injury and stasis of luminal contents:
  - Favor bacterial proliferation
  - Trigger inflammatory responses

Fecalith

Morphology

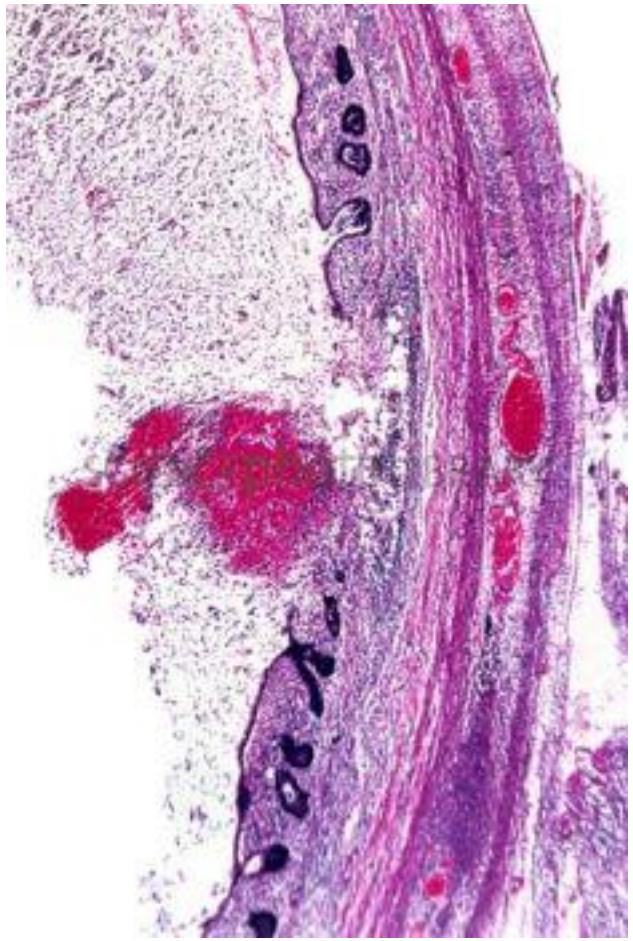
- Congested serosal blood vessels
- Normal glistening serosal surface turns into a dull, granular and erythematous
- Hall mark of Acute appendicitis:
  - Diagnosis of acute appendicitis requires neutrophilic infiltration of the muscularis propria
- Other features:
  - Mucosal ulceration
  - Luminal exudation
  - Fibrinopurulent exudate on the serosa
- Acute suppurative appendicitis
- Acute gangrenous appendicitis

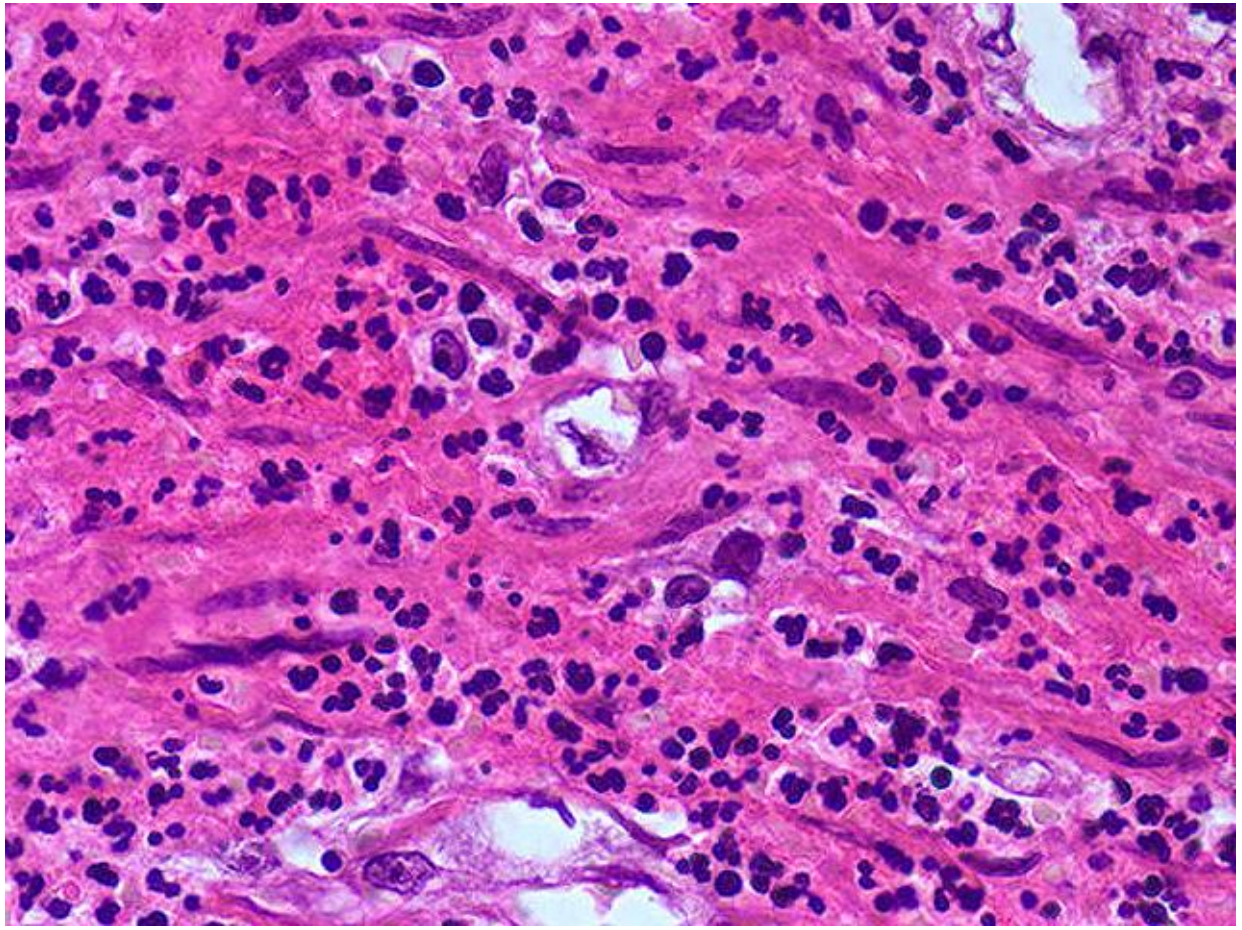




Hall mark of Acute appendicitis:

Diagnosis of acute appendicitis requires neutrophilic infiltration of the muscularis propria





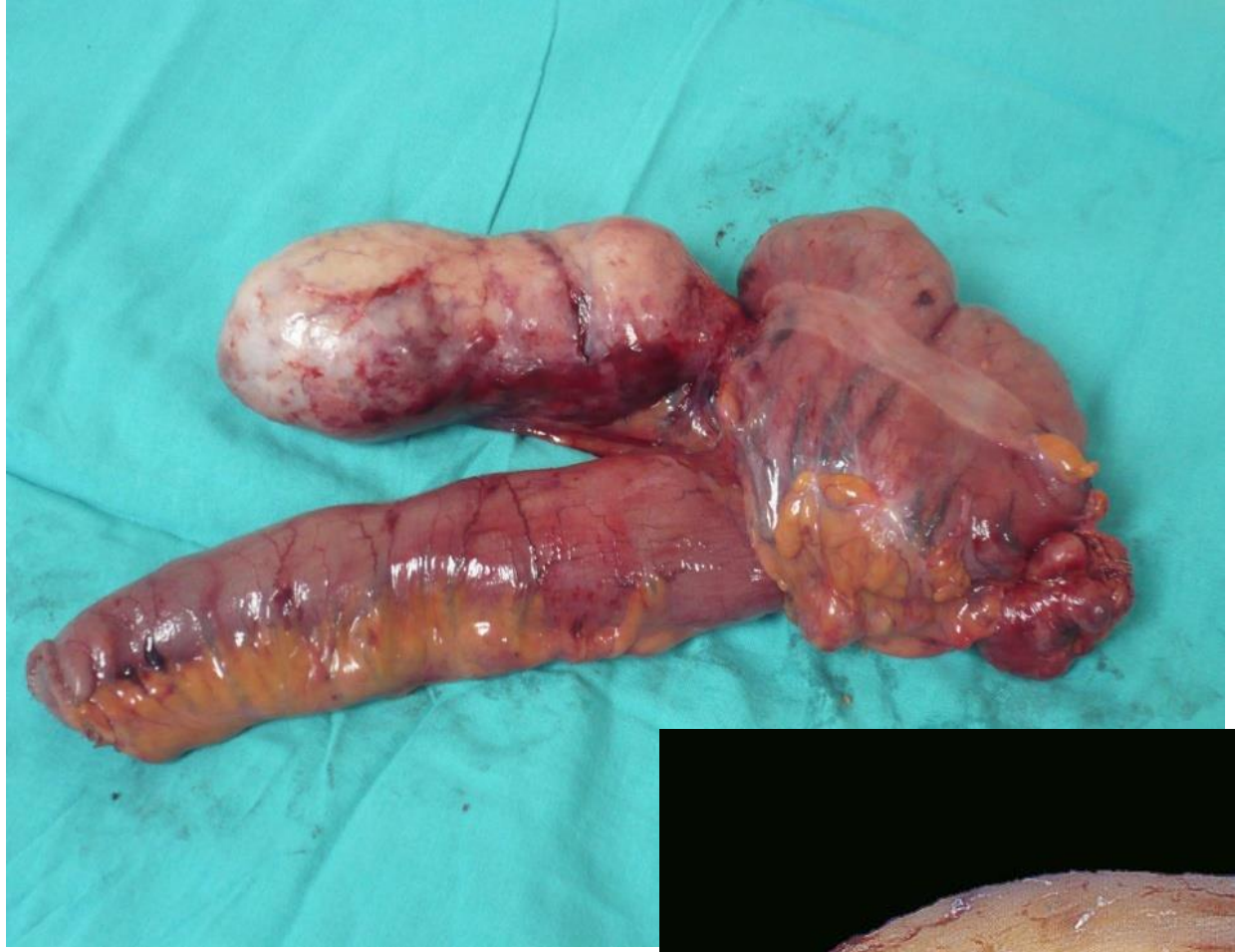
Clinical Features

- Pain:
  - Early acute appendicitis: Periumbilical
  - Later: Localizes to the right lower quadrant
- Classic physical finding is *McBurney's sign*
- Complications of appendicitis:
  - Perforation
  - Pyelophlebitis
  - Portal venous thrombosis
  - Liver abscess *and*
  - Bacteremia

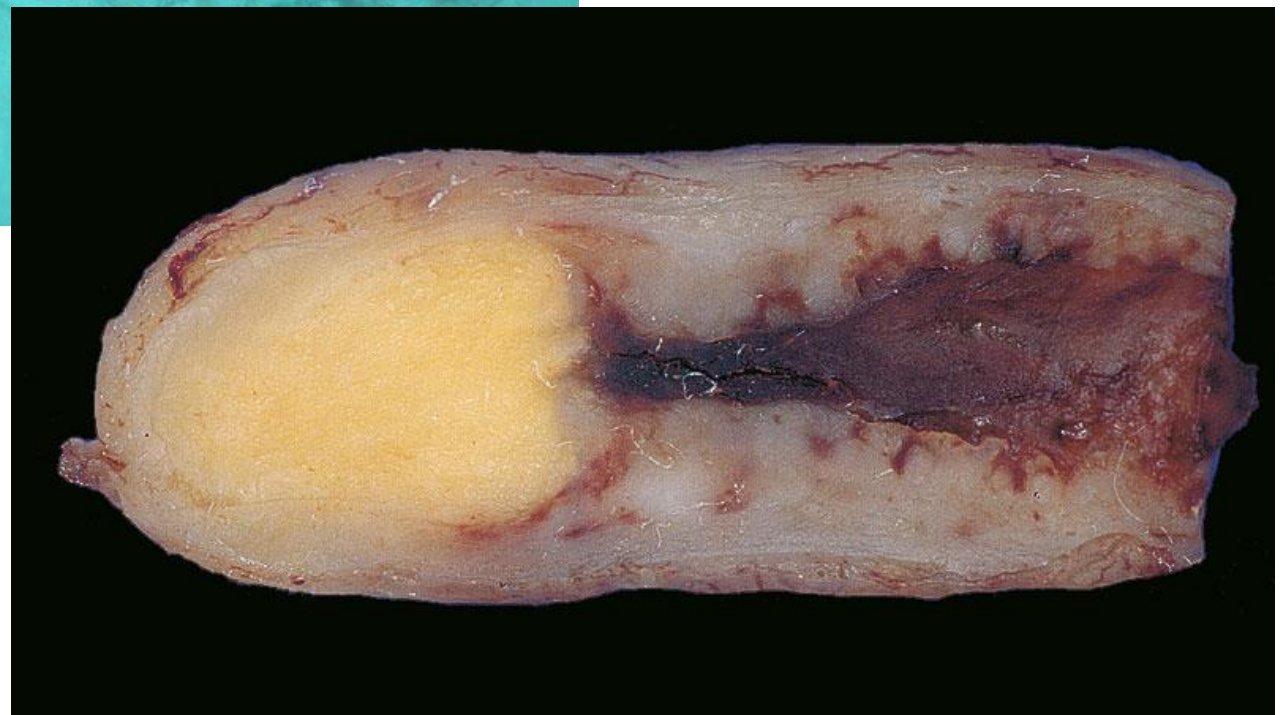
Tumors of the Appendix

Carcinoid

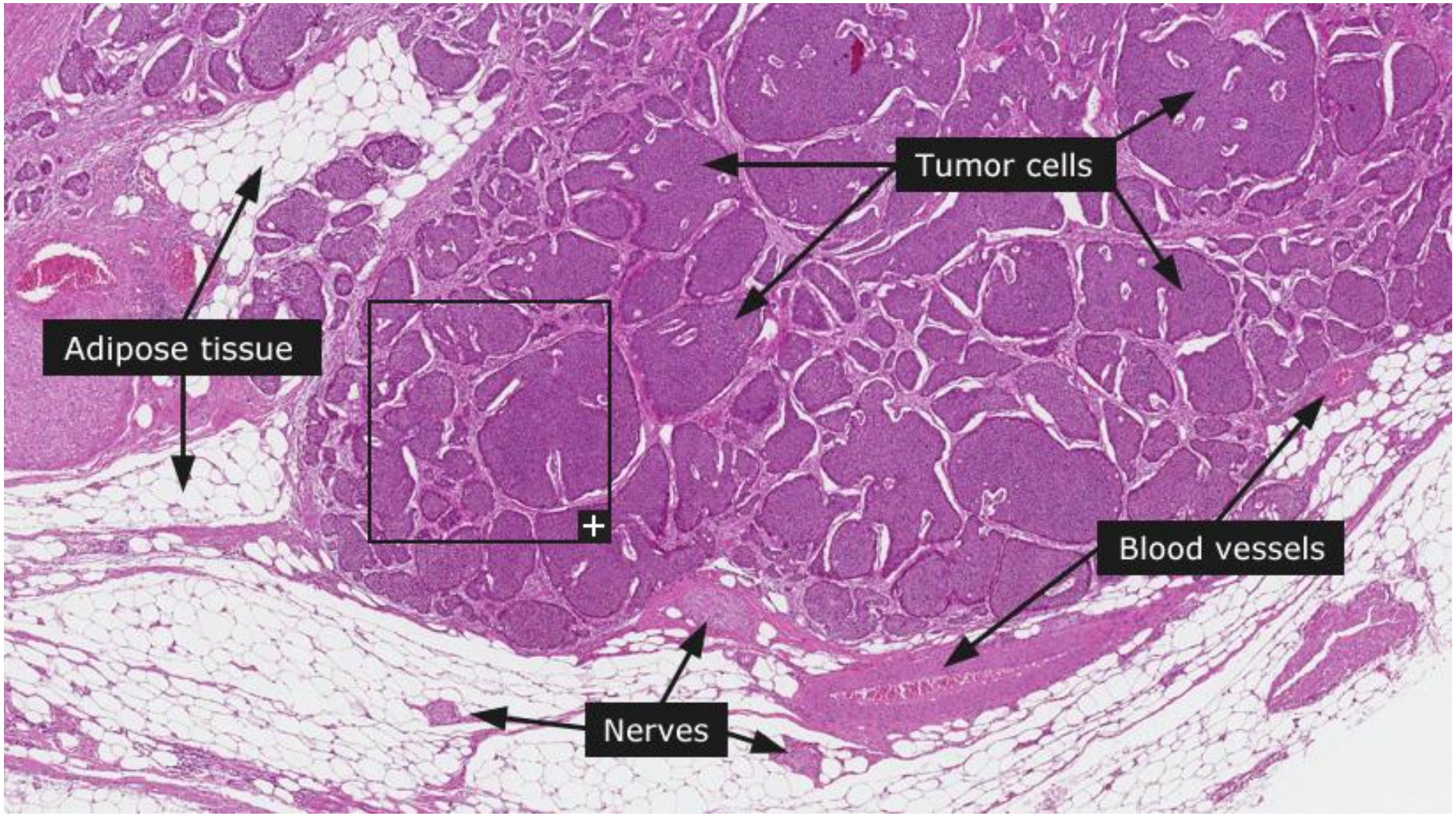
- The most common tumor of the appendix is the *carcinoid*
- Usually discovered incidentally
- Usually involves the distal tip of the appendix
- 2 to 3 cm in diameter
- Nodal metastases are infrequent, and distant spread is rare



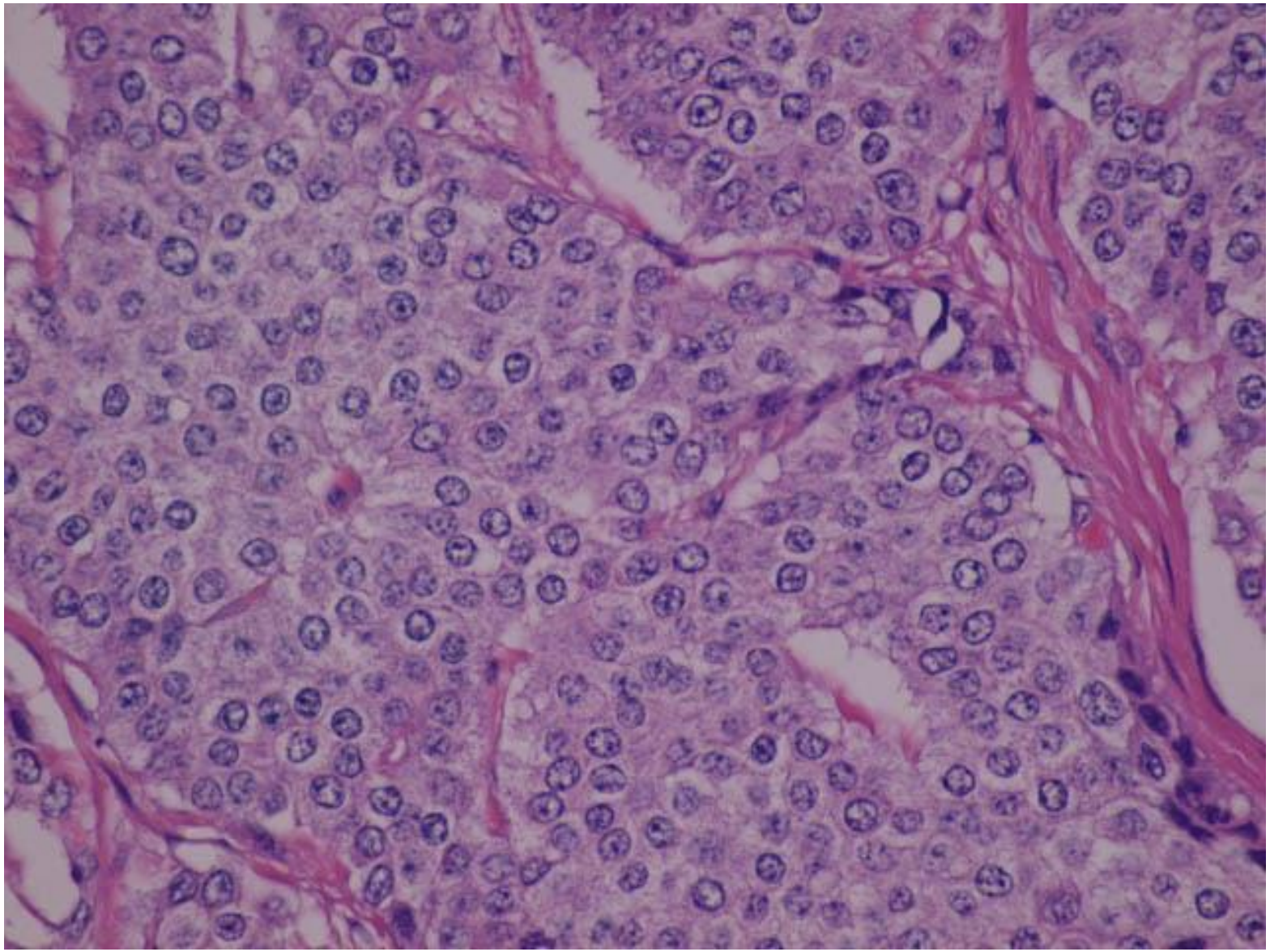
Carcinoiod of appendix

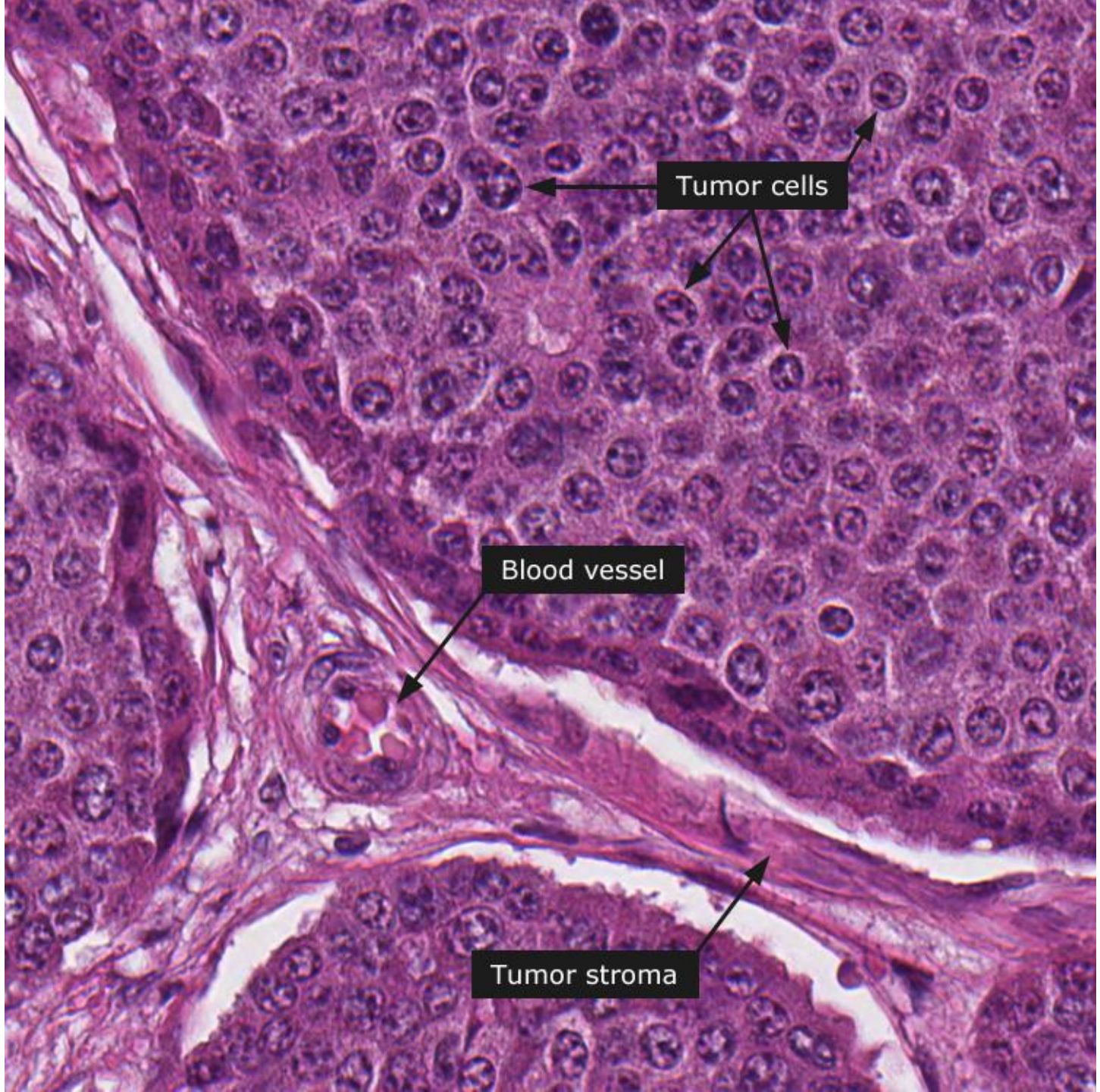


Carcinoid of appendix



Carcinoid of appendix





Carcinoid of appendix

- **Carcinoid tumor:**

It arises from the neuroendocrine cells present in the wall of the bowel, they can produce many hormones e.g serotonine, gastrin, and they can be demonstrated immunohistochemically by neuron specific enolase, cheomogranin and synaptophysin.

Sites:

Appendix: Which is the commonest site

Ileum

Stomach

Rectum

carcinoid syndrome :

the tumor is of two types:

1- non functioning

2- functioning which produce the characteristic **attacks** of flushing , diarrhea, bronchospasm due to the production of 5HT(serotonine)

Carcinoid tumor (small intestine)

Carcinoid tumor