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# Pathology of the GIT III.

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# Tumours of the Small and Large Intestines

## terminology

- A polyp – tumorous mass that protrudes into the lumen of the gut (sessile, pedunculated)
    - non-neoplastic polyp – the result of abnormal mucosal maturation, inflammation or architecture
    - neoplastic polyp– the result of proliferation and **dysplasia**, they are termed adenomatous polyps or adenomas, precursors of carcinoma.
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# Tumours of the Small and Large Intestines

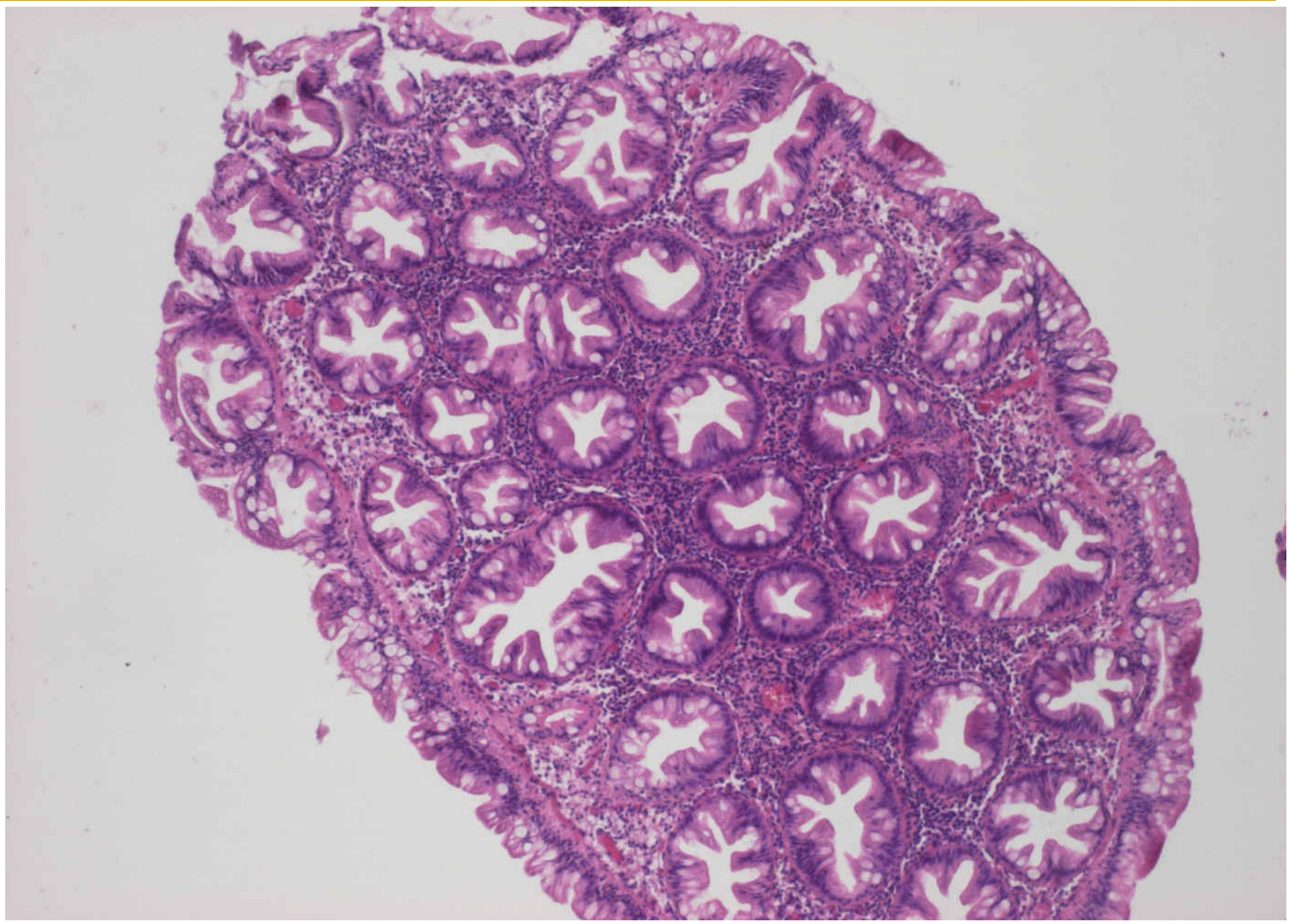
- **non-neoplastic (benign) polyps**
  - hyperplastic polyps
  - hamartomatous polyps (juvenile, Peutz-Jeghers)
  - inflammatory, lymphoid polyps
- **neoplastic epithelial lesions**
  - benign (tubular, tubulo-villous, villous adenoma)
  - malignant (adenocarcinoma, carcinoid)
- **mesenchymal lesions**
  - benign (leiomyoma, lipoma...)
  - malignant (leiomyosarcoma, liposarcoma...)
  - GIST
- **lymphomas**

# Tumours of the Small and Large Intestines

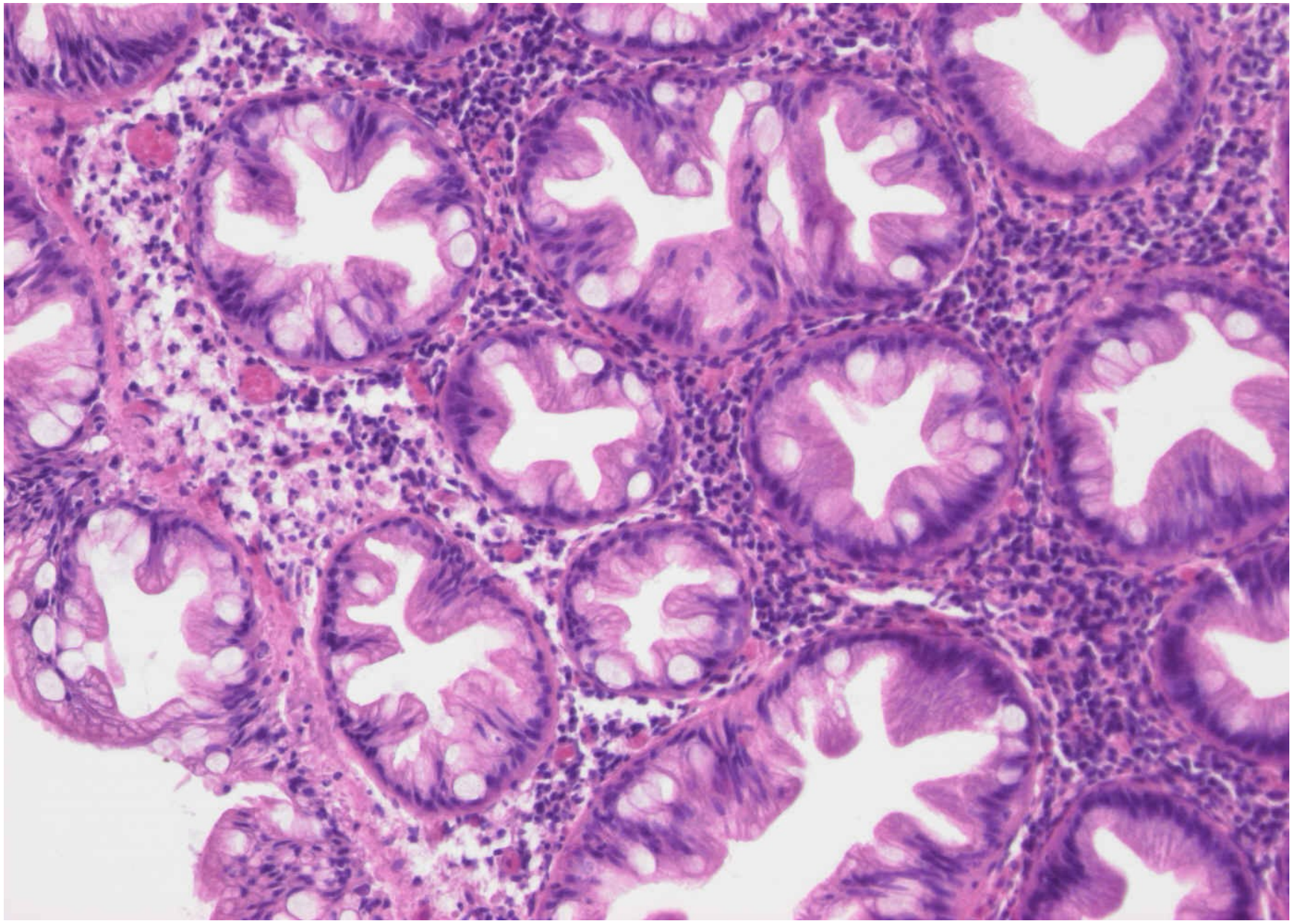
## non-neoplastic polyps

- hyperplastic polyp – benign epithelial proliferation localised most commonly in the rectum and the sigmoid. Incidency: 85% of adult population in the industrial countries. Only 2-3% in the countries of the 3rd world.
- Nipple-like, hemispheric, smooth, moist protrusions of the mucosa
- Well-formed glands lined by non-neoplastic epithelial cells, a serrated epithelial profile and an irregular crypt architecture

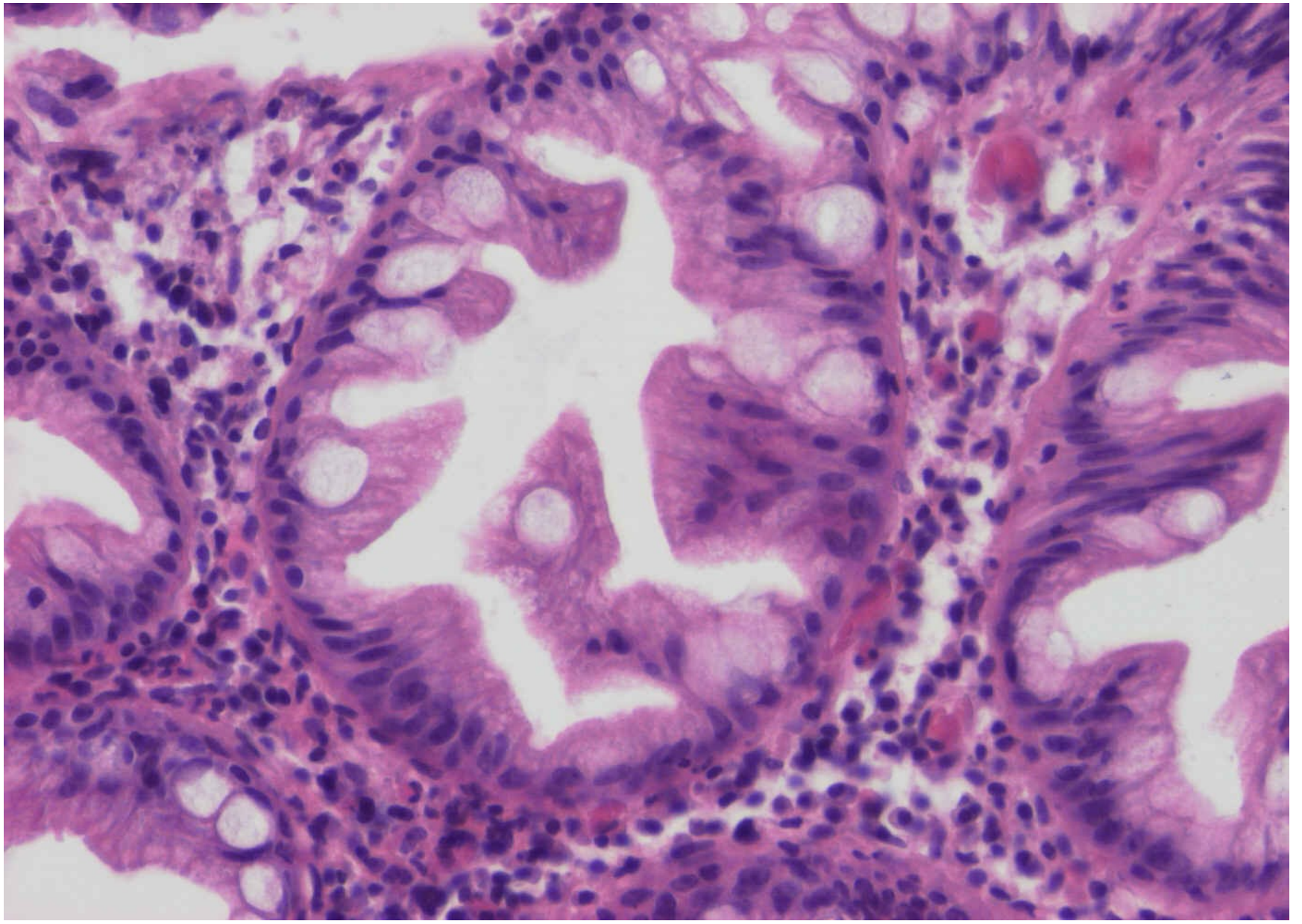




Hyperplastic polyp



Hyperplastic polyp



Hyperplastic polyp - detail

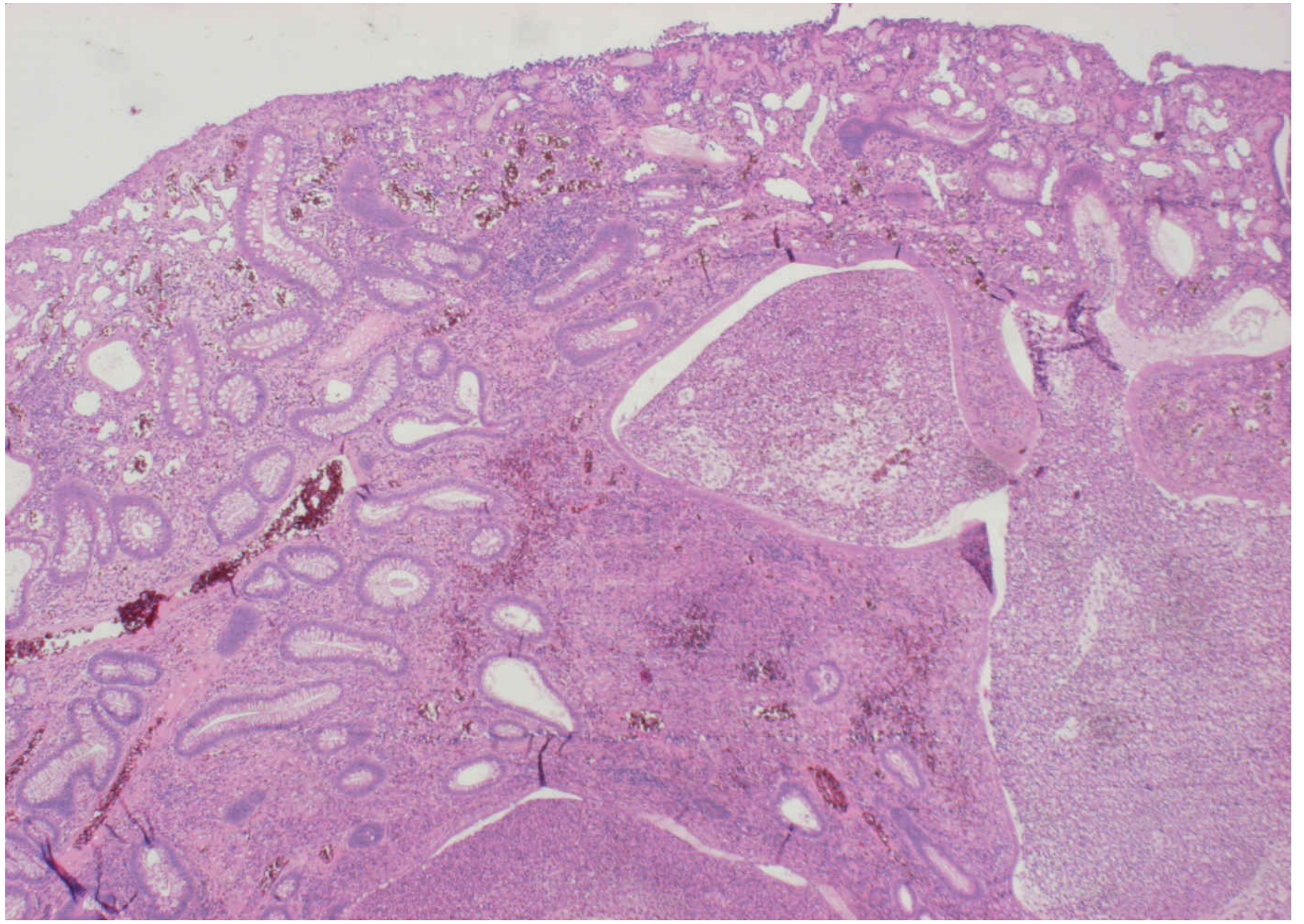
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# Tumours of the Small and Large Intestines

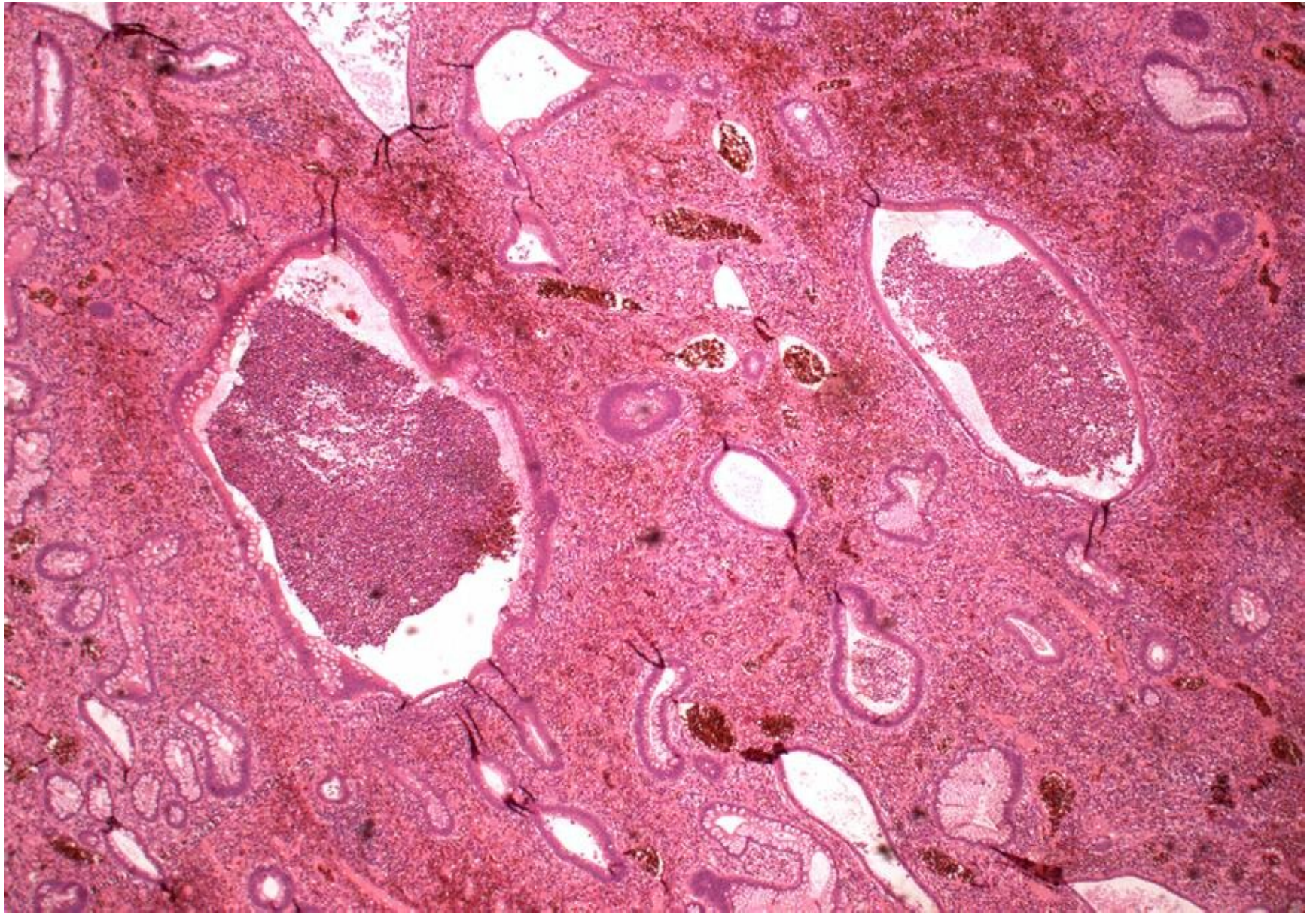
## non-neoplastic polyps

- Juvenile polyps – focal hamartomatous malformations of the mucosal elements. For the most part, they are sporadic lesions (in children younger than 5), or within the framework of a rare autosomal dominant juvenile polyposis syndrome (increased risk of cancer)
  - Large (1-3 cm), rounded, smooth or slightly lobulated lesions with stalks up to 2 cm in length
  - Hist. Lamina propria constitutes the bulk of the polyp, enclosing abundant cystically dilated glands.
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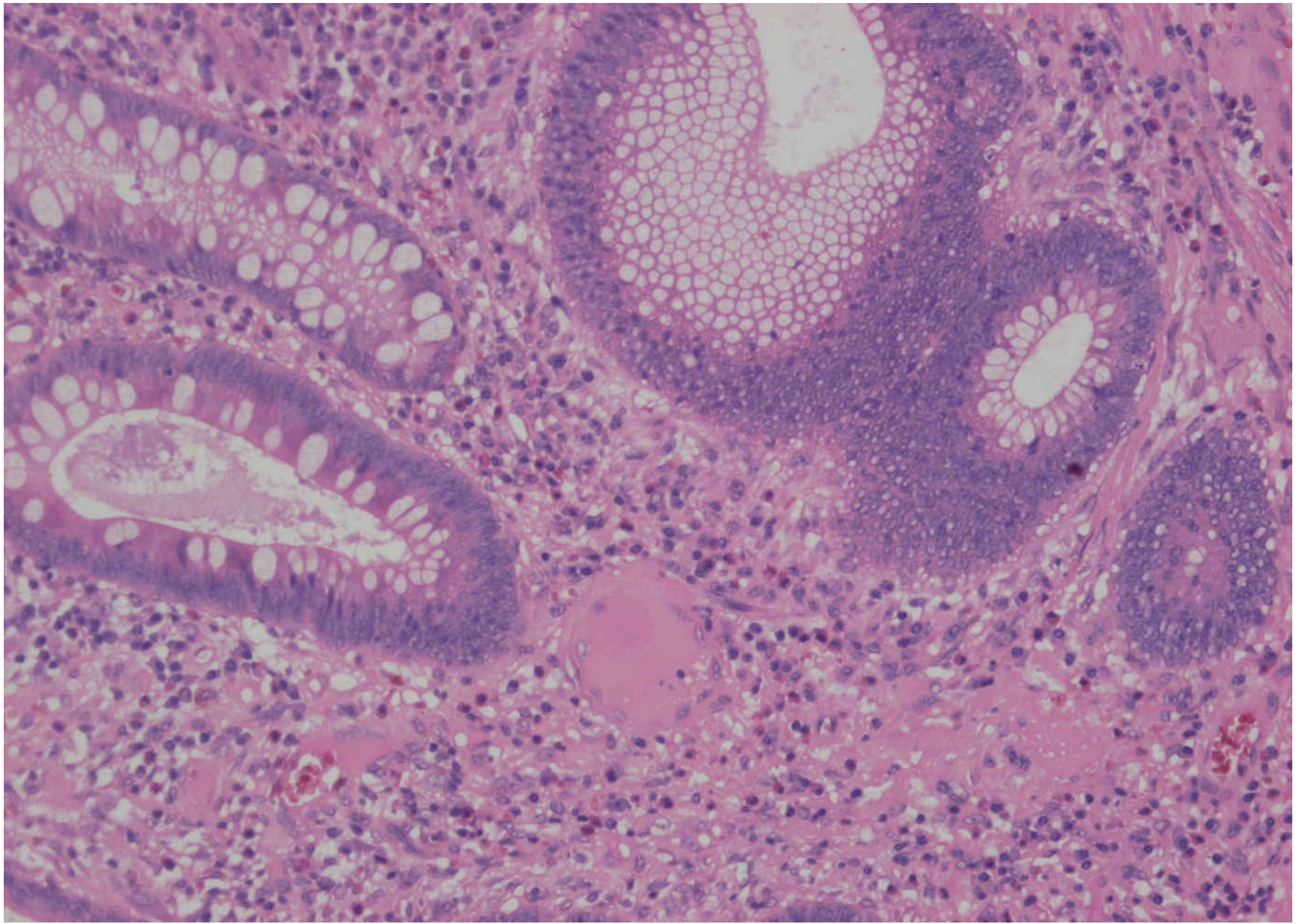




Juvenile polyp



Juvenile polyp – dilated crypts



Juvenile polyp – crypts with regular epithelium

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# Tumours of the Small and Large Intestines

## neoplastic polyps

- adenomas – arise as the result of epithelial proliferative dysplasia which may range from mild to so severe as to constitute carcinoma in situ.
  - The malignant risk is correlated with 3 independent features:
    - adenoma size
    - histologic architecture
    - severity of epithelial dysplasia
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# Tumours of the Small and Large Intestines

neoplastic polyps - subtypes

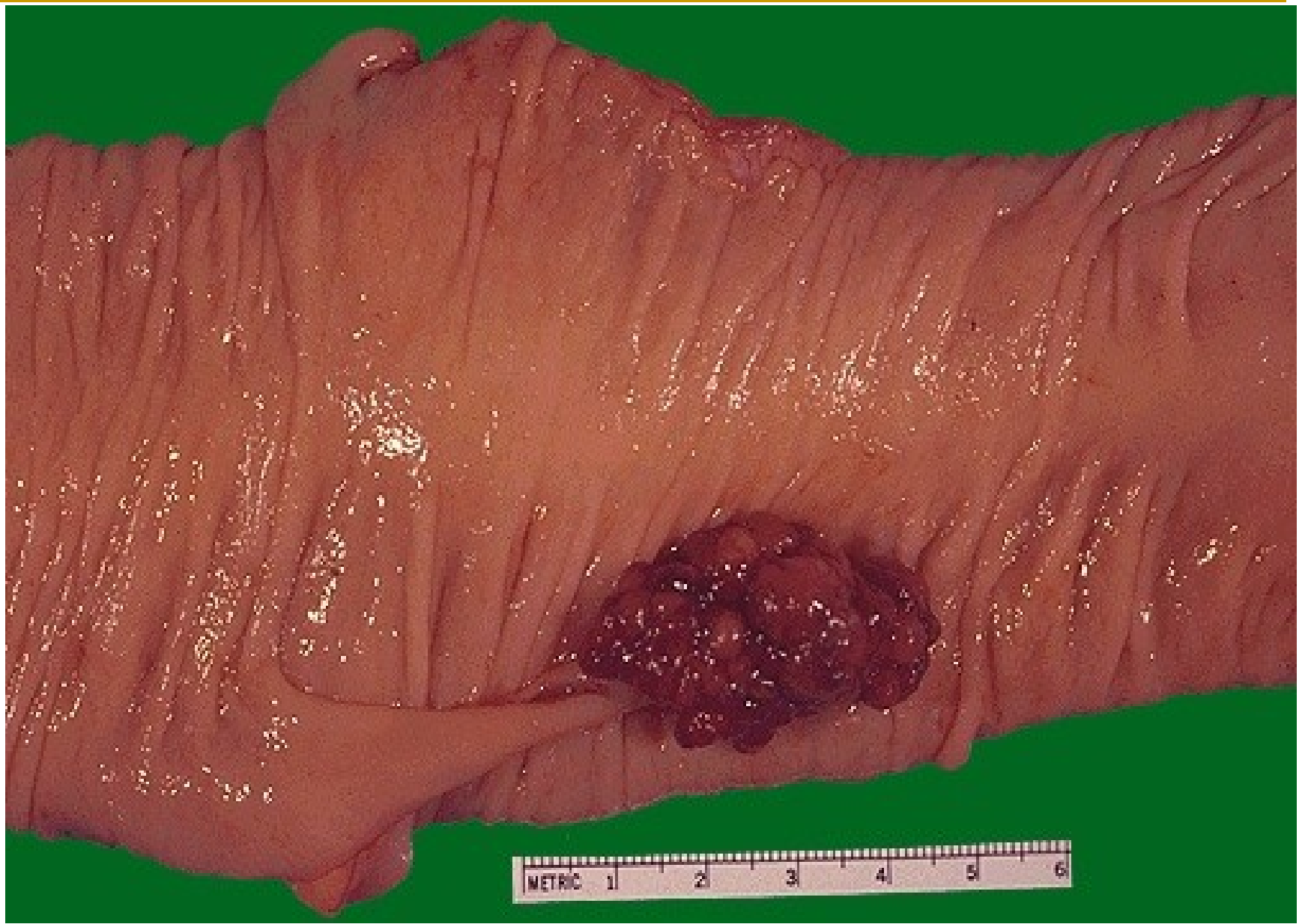
- tubular adenomas (greater than 75% tubular arch. - glands)
  - villous adenomas (greater than 75% villous arch.- projections)
  - tubulovillous adenomas (a mixture of the previous two, 25-75% villous arch.)
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# Tumours of the Small and Large Intestines

## neoplastic polyps

### ■ Familial polyposis syndromes

- Familial adenomatous polyposis (FAP)– AD disease, innumerable adenomatous polyps in the colonic mucosa, the average age of onset of polyps is the teens to twenties, 100% risk of progression to adenocarcinoma (Gardner sy – polyposis + osteomas + fibromatosis+ epidermal cysts)
  - Peutz-Jeghers sy – multiple hamartomatous polyps and a moderately increased risk of cancer, frequently in extra GIT sites, melanotic mucosal and cutaneous pigmentation
  - Hereditary nonpolyposis colorectal cancer (Lynch sy) – increased risk colorectal cancer and extraintestinal cancer, particularly of the endometrium in women.
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Adenomatous polyp - macroscopically

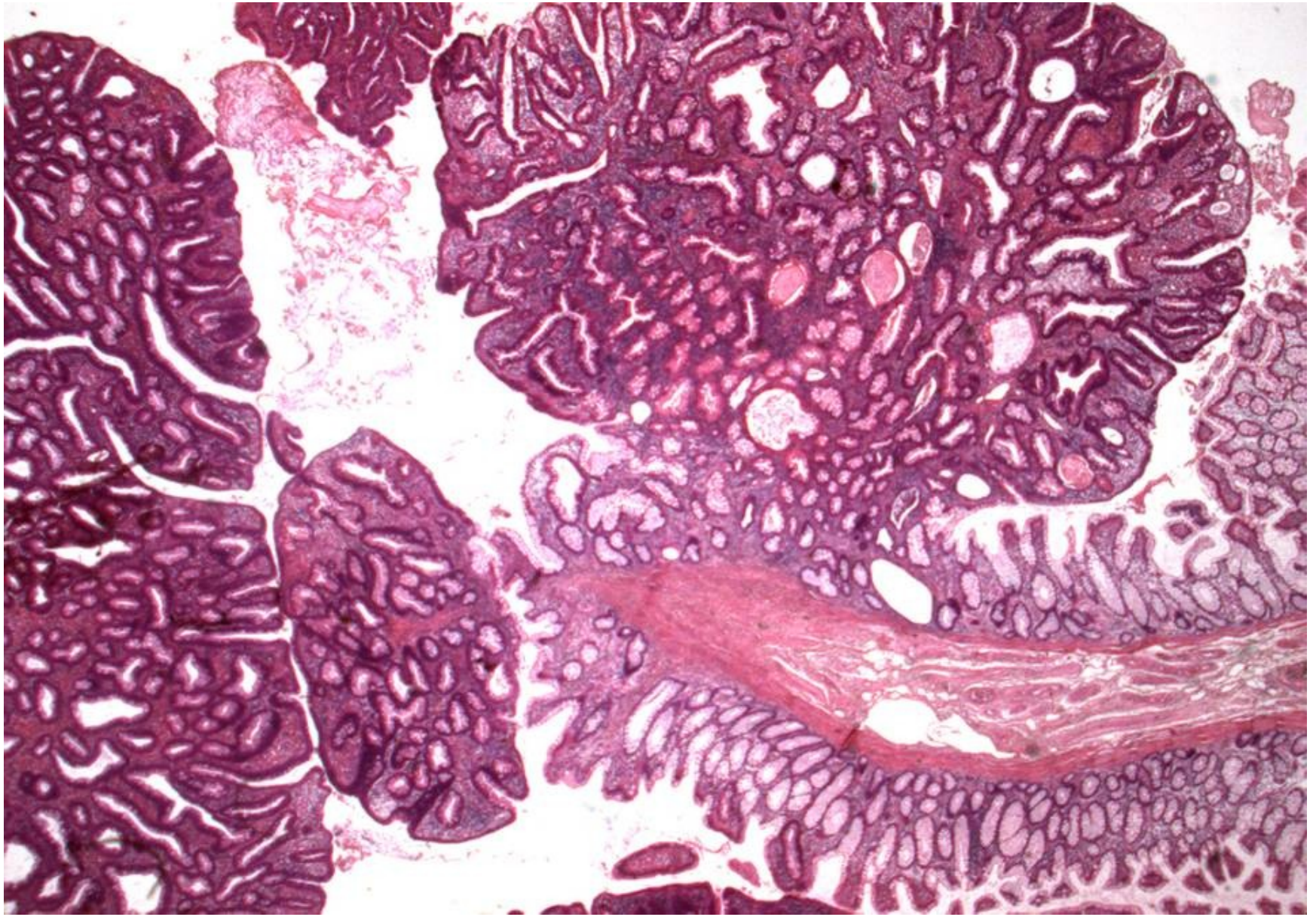


Adenomatous polyps - macroscopically

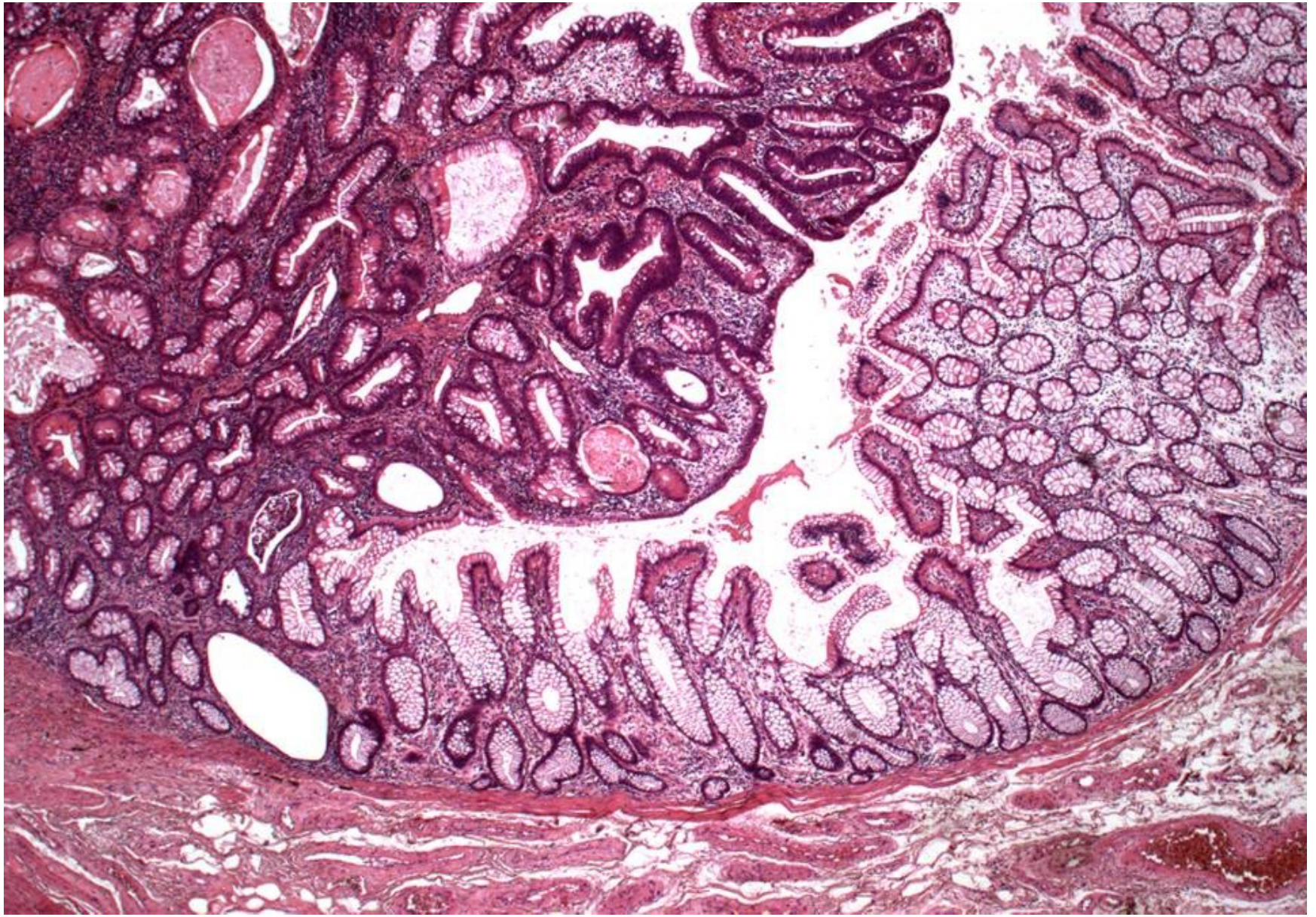




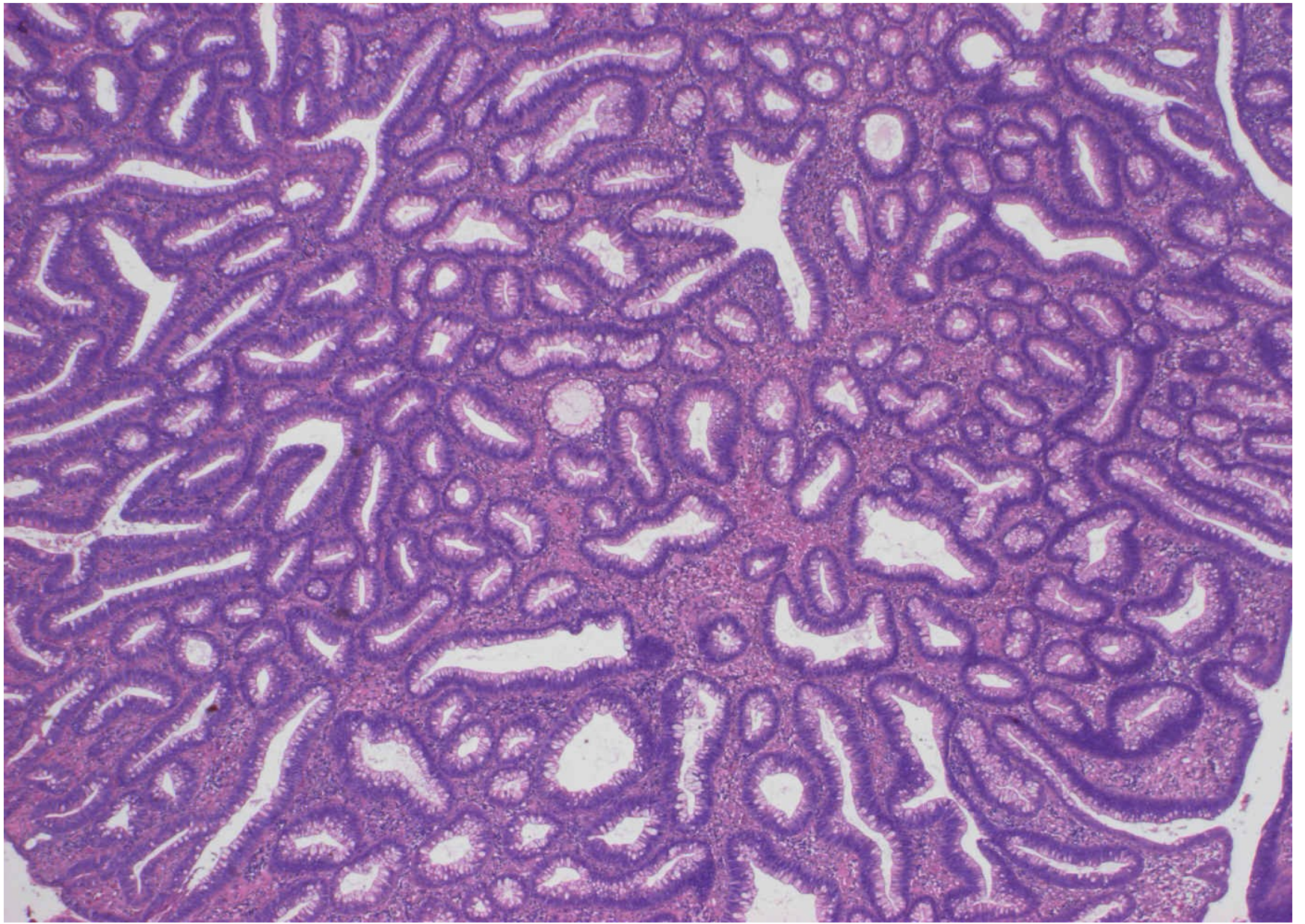
Polyposis of colon - macroscopically



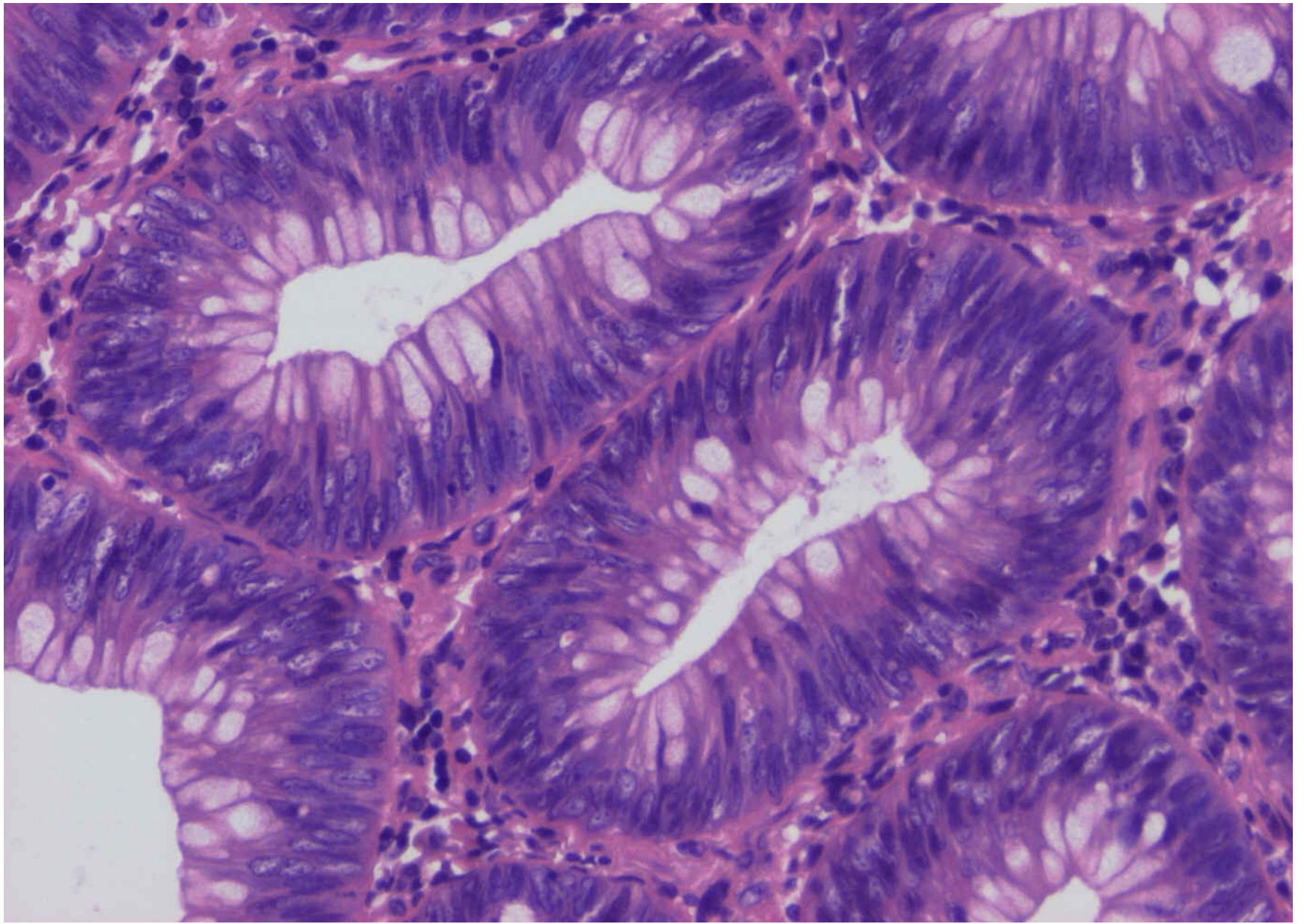
Tubular adenoma – microscopically



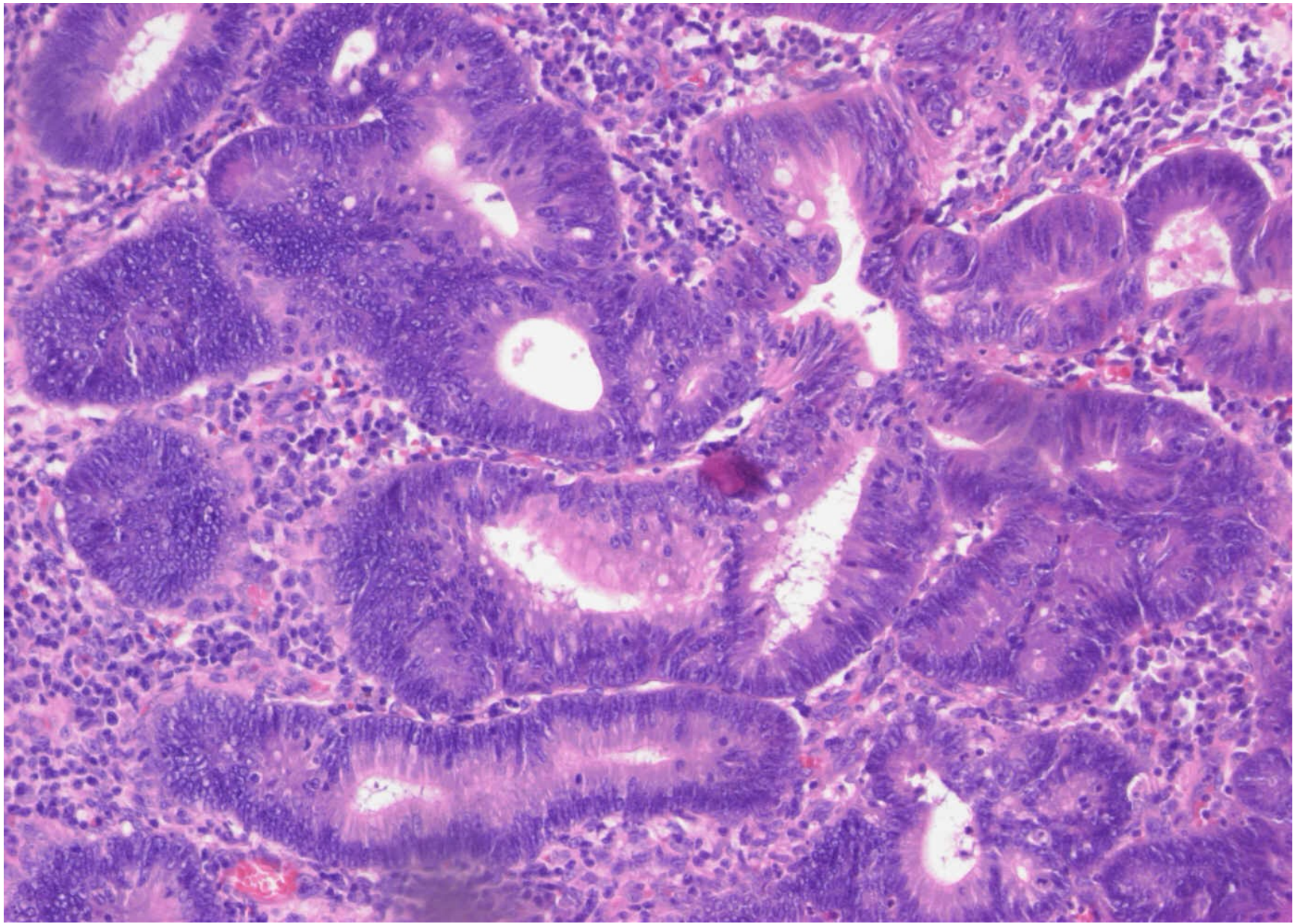
Tubular adenoma – transition into dysplastic epithelium



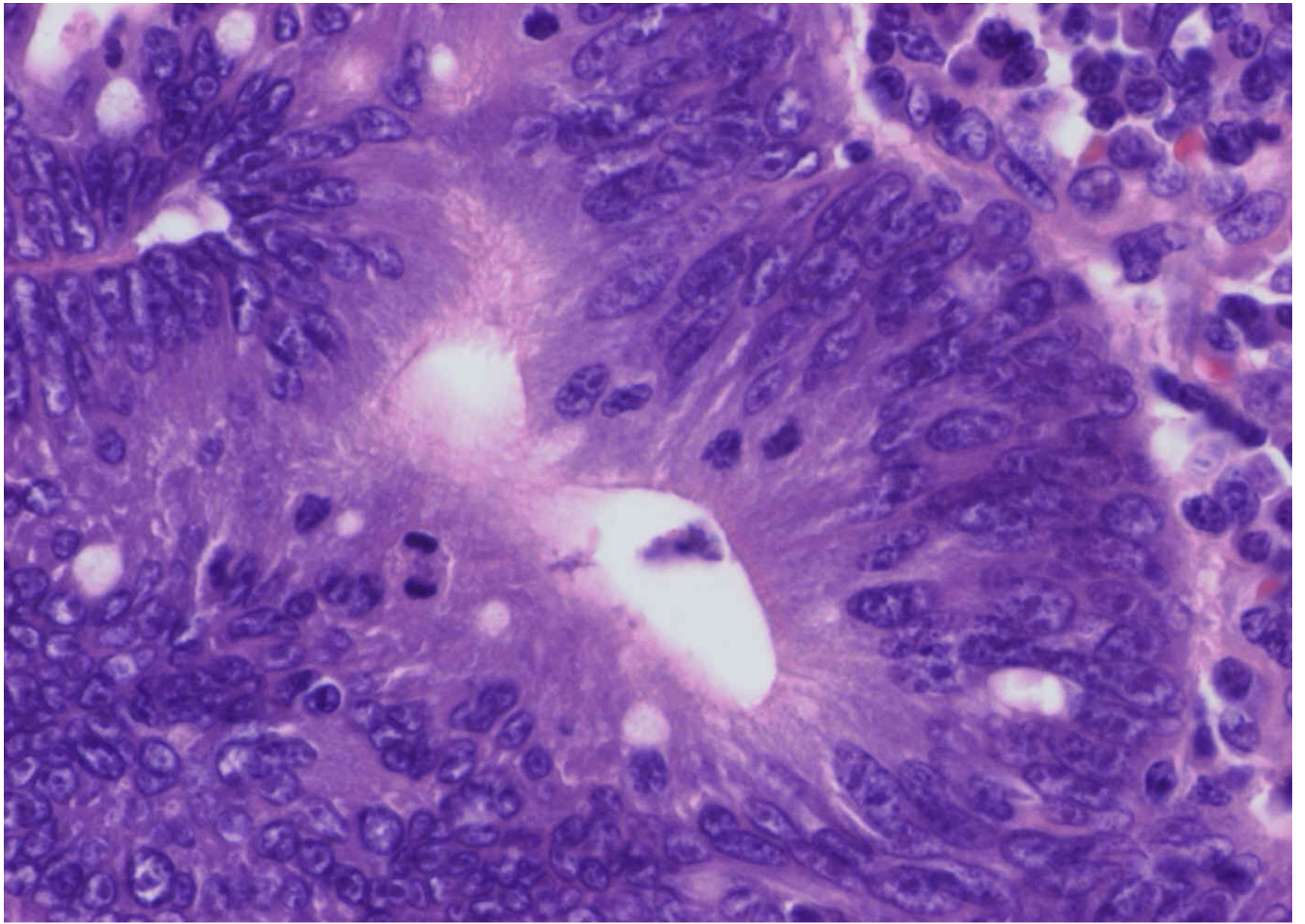
Tubular adenoma – microscopically



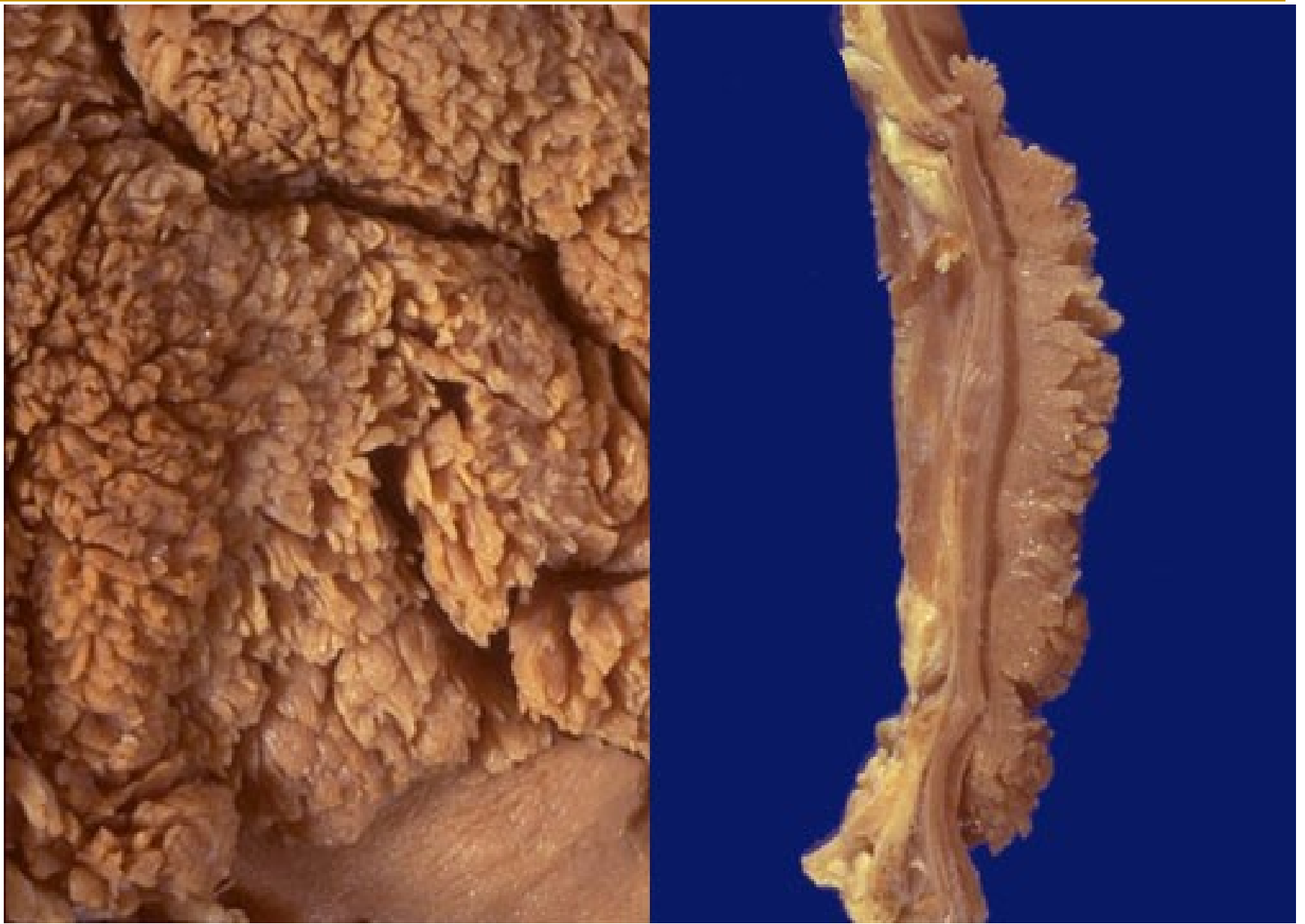
Tubular adenoma – low-grade dysplasia



Tubular adenoma – high-grade dysplasia

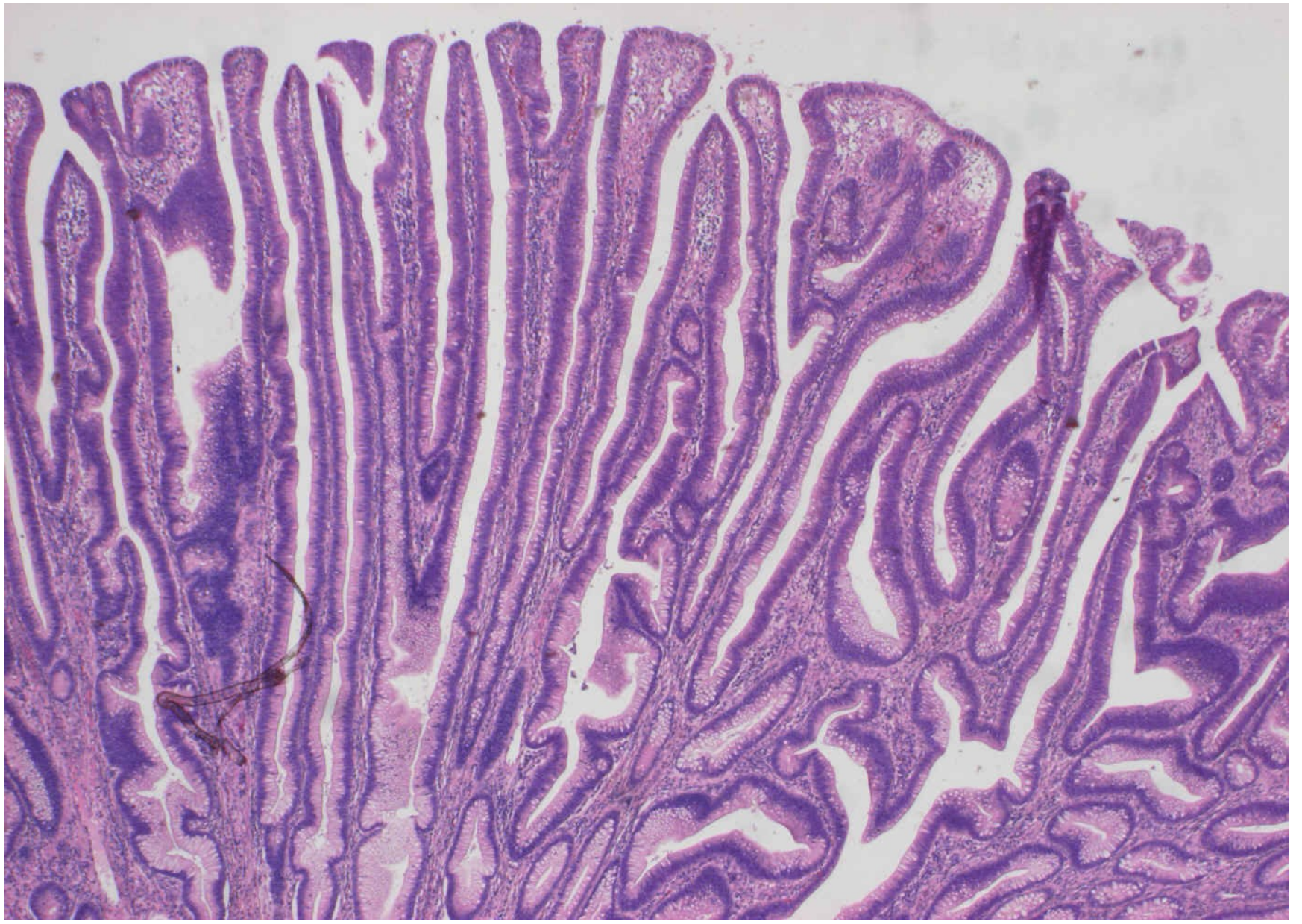


Tubular adenoma – high-grade dysplasia – detail

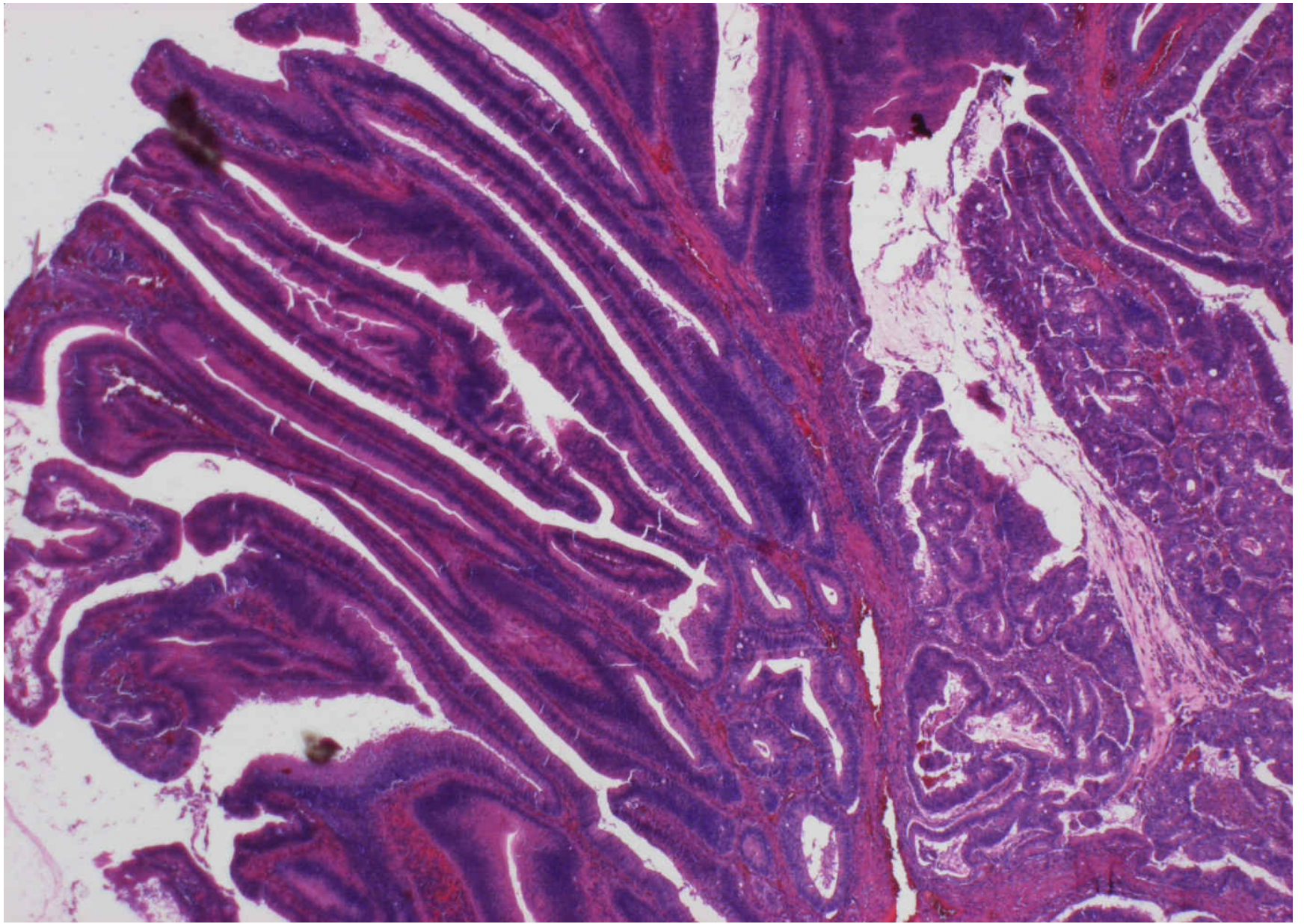


Villous adenoma – macroscopically

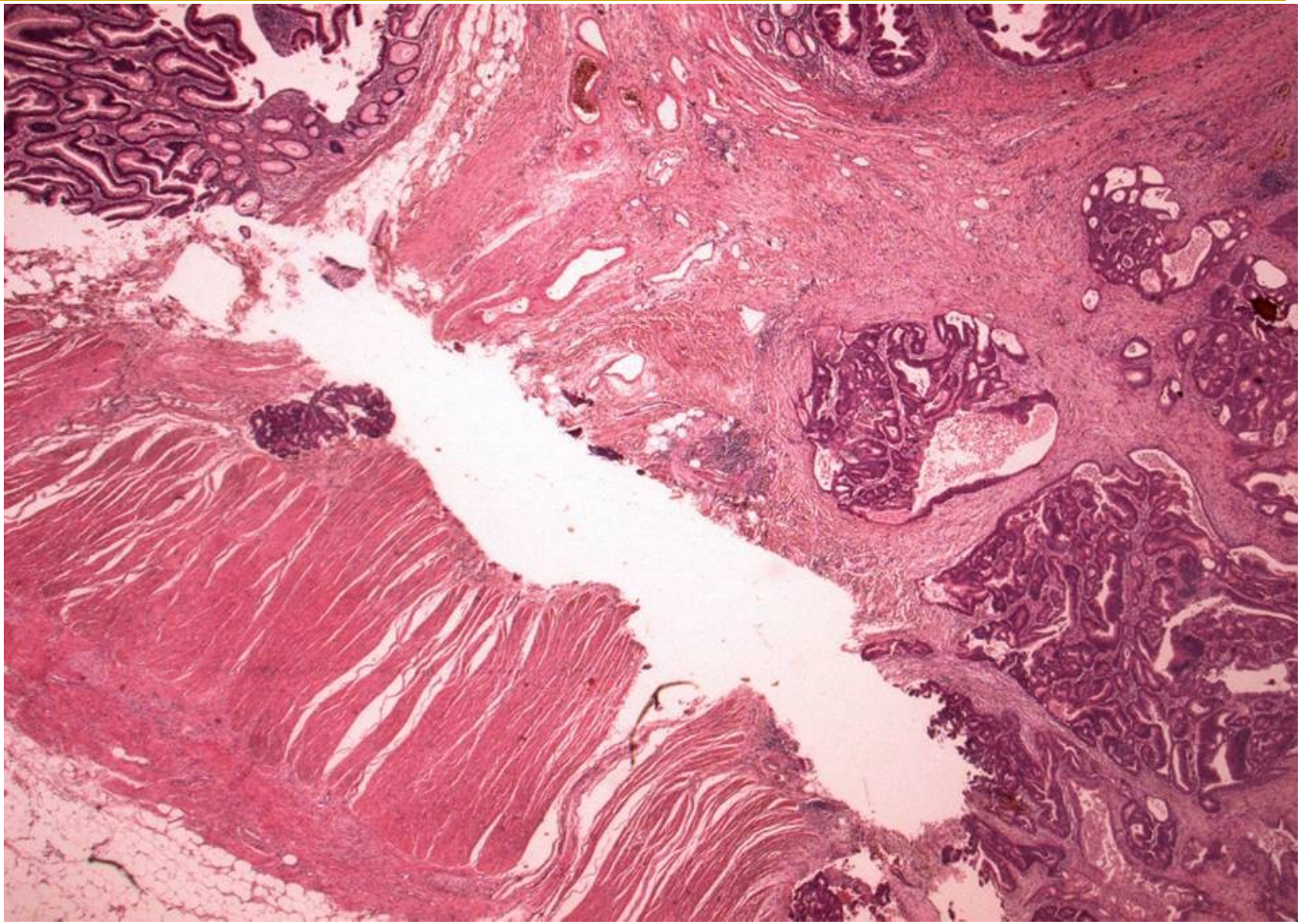




Villous adenoma – microscopically



Villous adenoma – microscopically – with an intramucous carcinoma



Villous adenoma with an infiltrating carcinoma

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# Tumours of the Small and Large Intestines

## colorectal carcinoma

- One of the commonest cancers
  - Peak incidence is 60 to 79 years
  - Multifactorial etiology – dietary factors (a low content of fiber, excessive intake of fats, etc.)
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# Tumours of the Small and Large Intestines

## colorectal carcinoma

- Right-sided lesions – proximal colon; cecum and ascending colon 38%, asymptomatic for years, iron deficiency anemia, abdominal pain, fatigue
  - Left-sided lesions - rectosigmoid – occult bleeding, changes in bowel habit, rectal bleeding.
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# Tumours of the Small and Large Intestines

## colorectal carcinoma

- Right sided I.- polypoid, exophytic masses – obstruction is uncommon
  - Left-sided I.- annular, encircling lesions – napkin ring constrictions of the bowel
  - Microscopic characteristics of the both are similar (more or less differentiated adenocarcinoma, desmoplastic stromal response → firm, hard consistency, mucin production, etc.)
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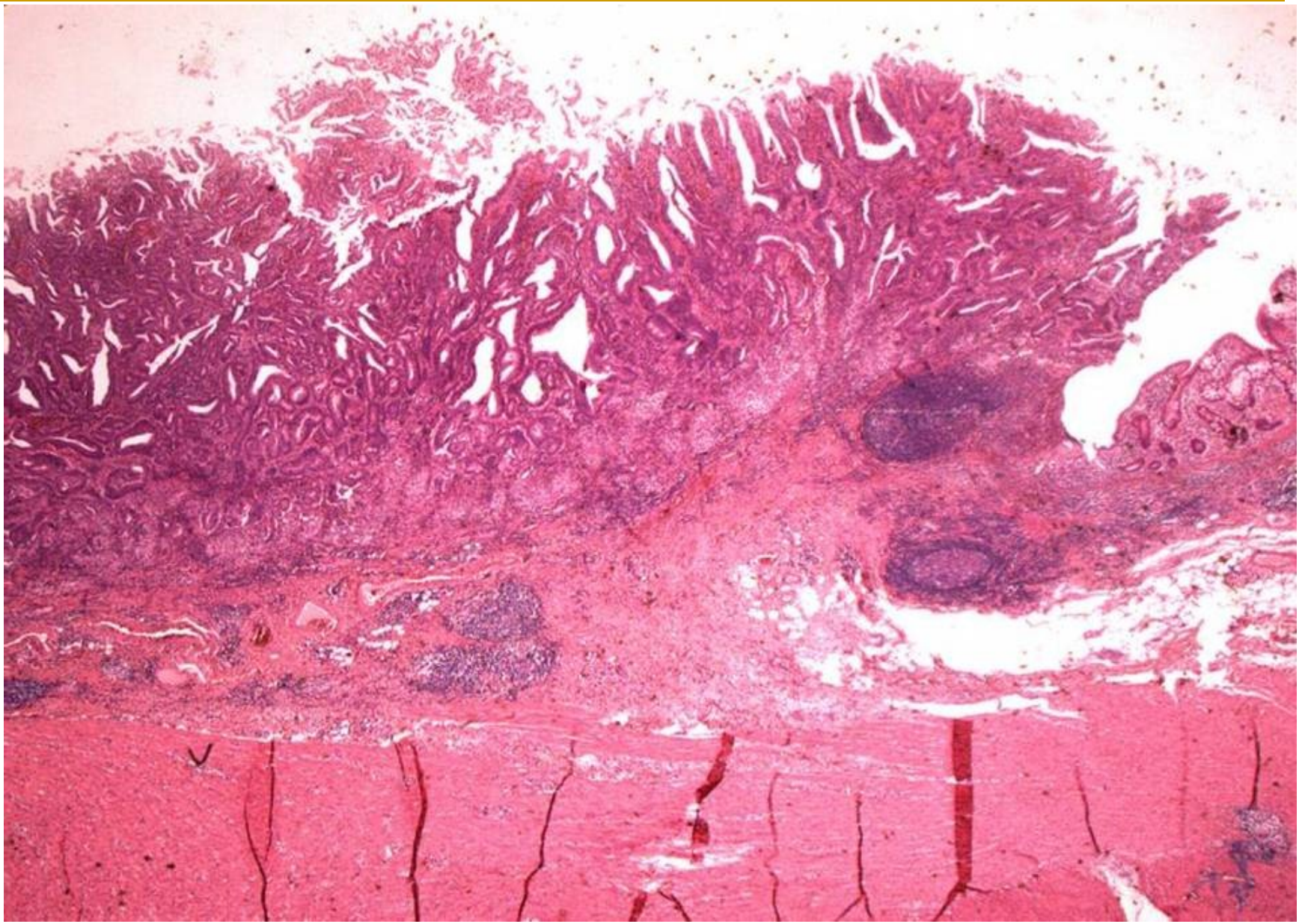


Colonic adenocarcinoma

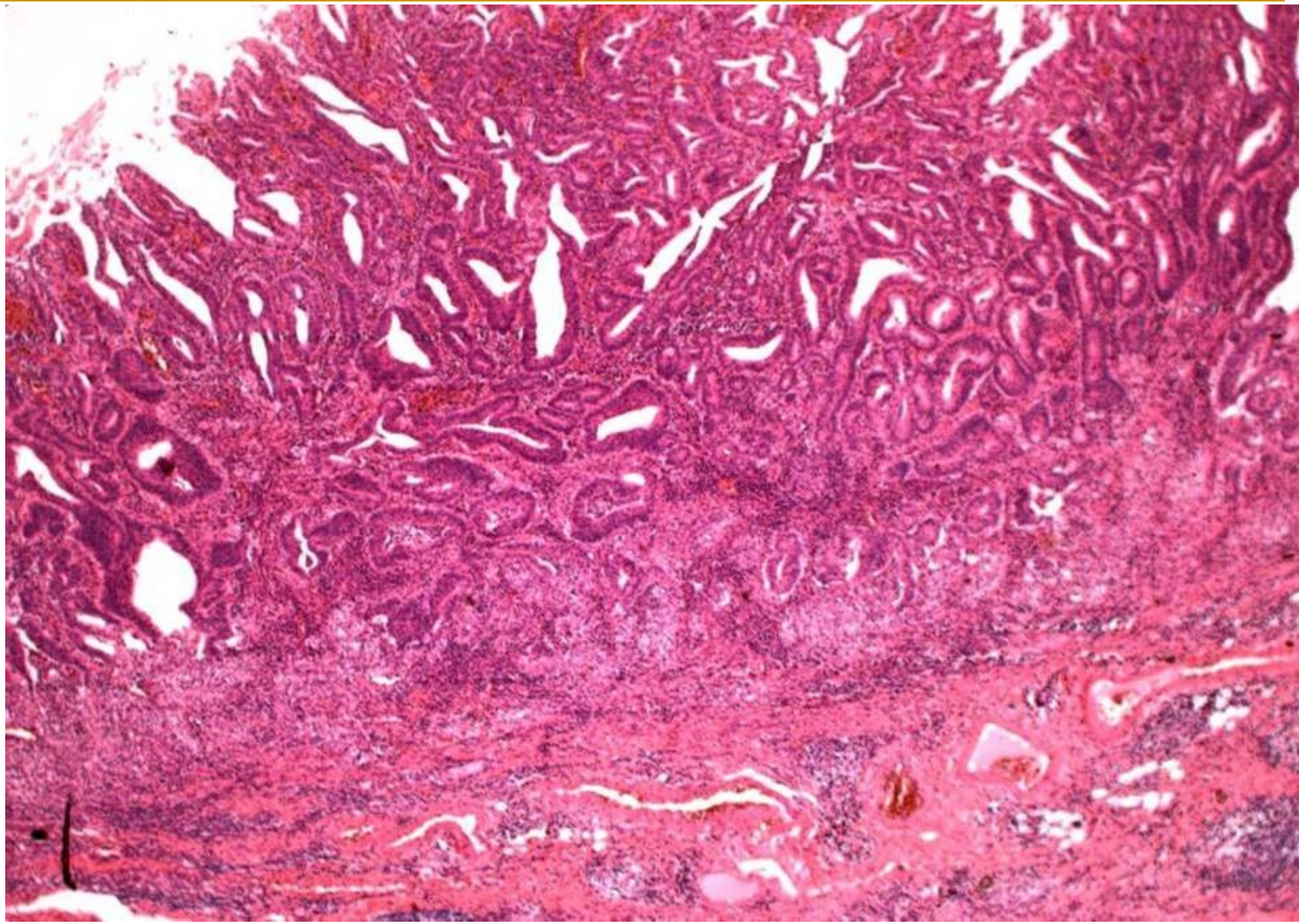


Colonic adenocarcinoma

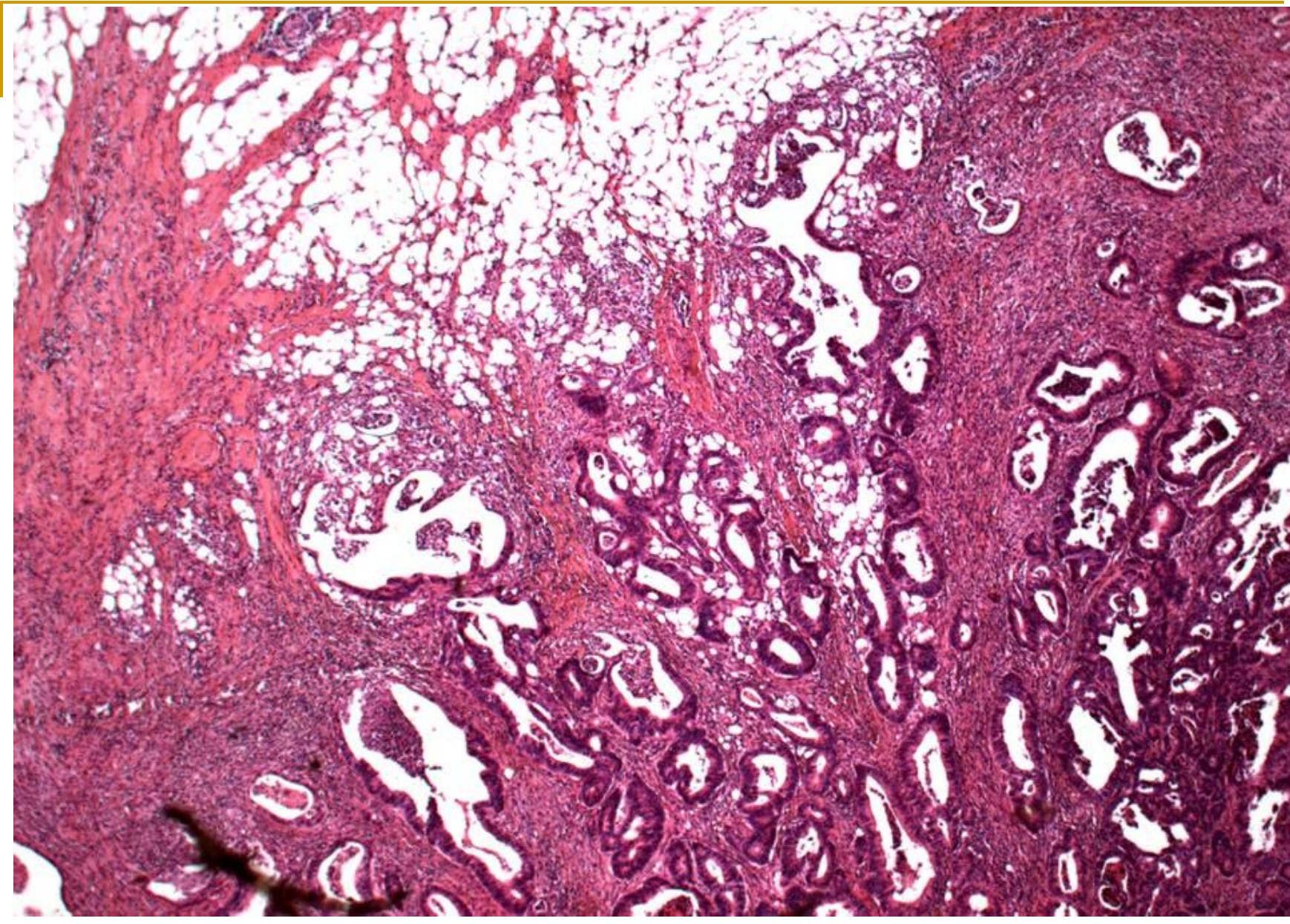




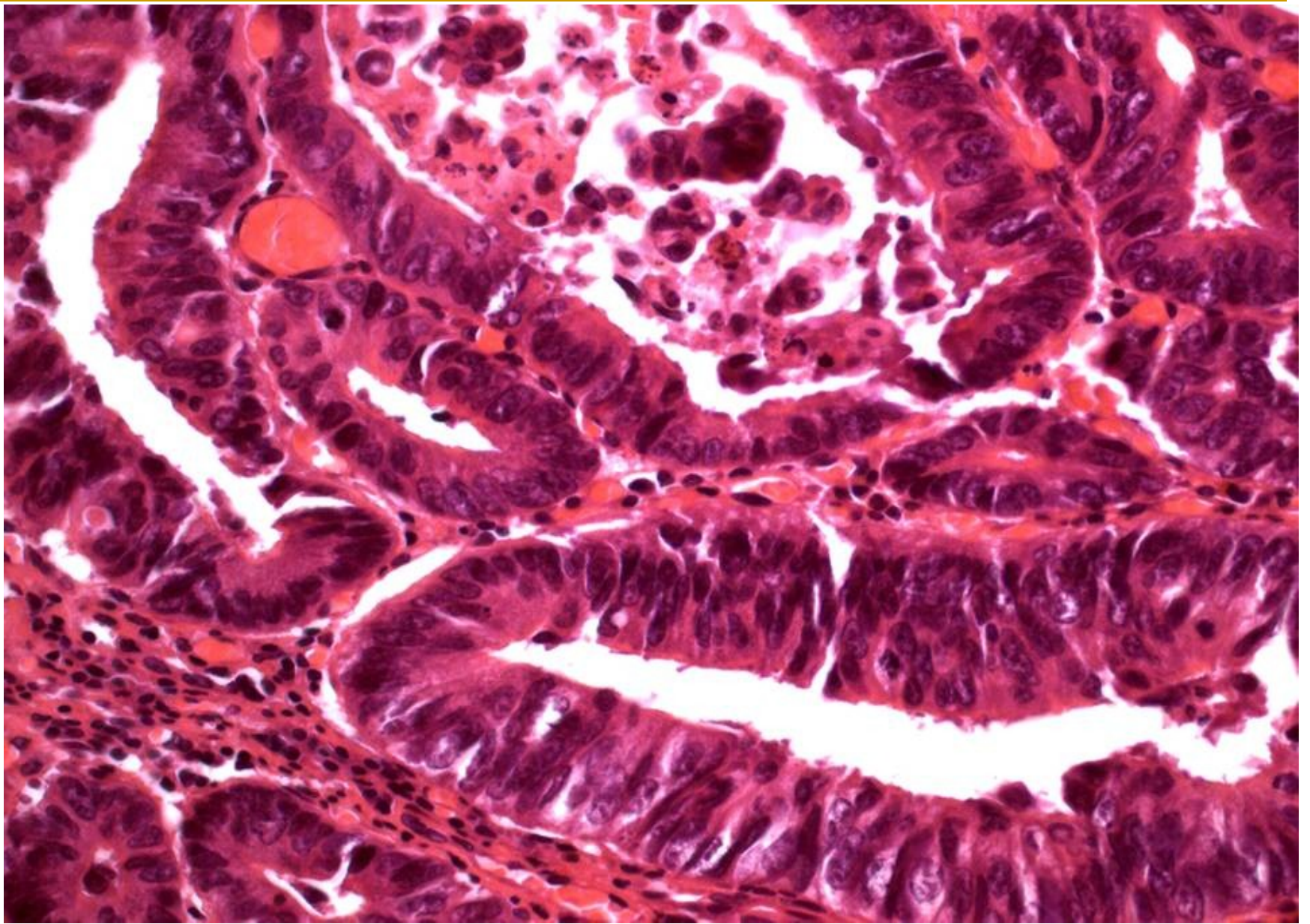
Adenocarcinoma of intestinal type



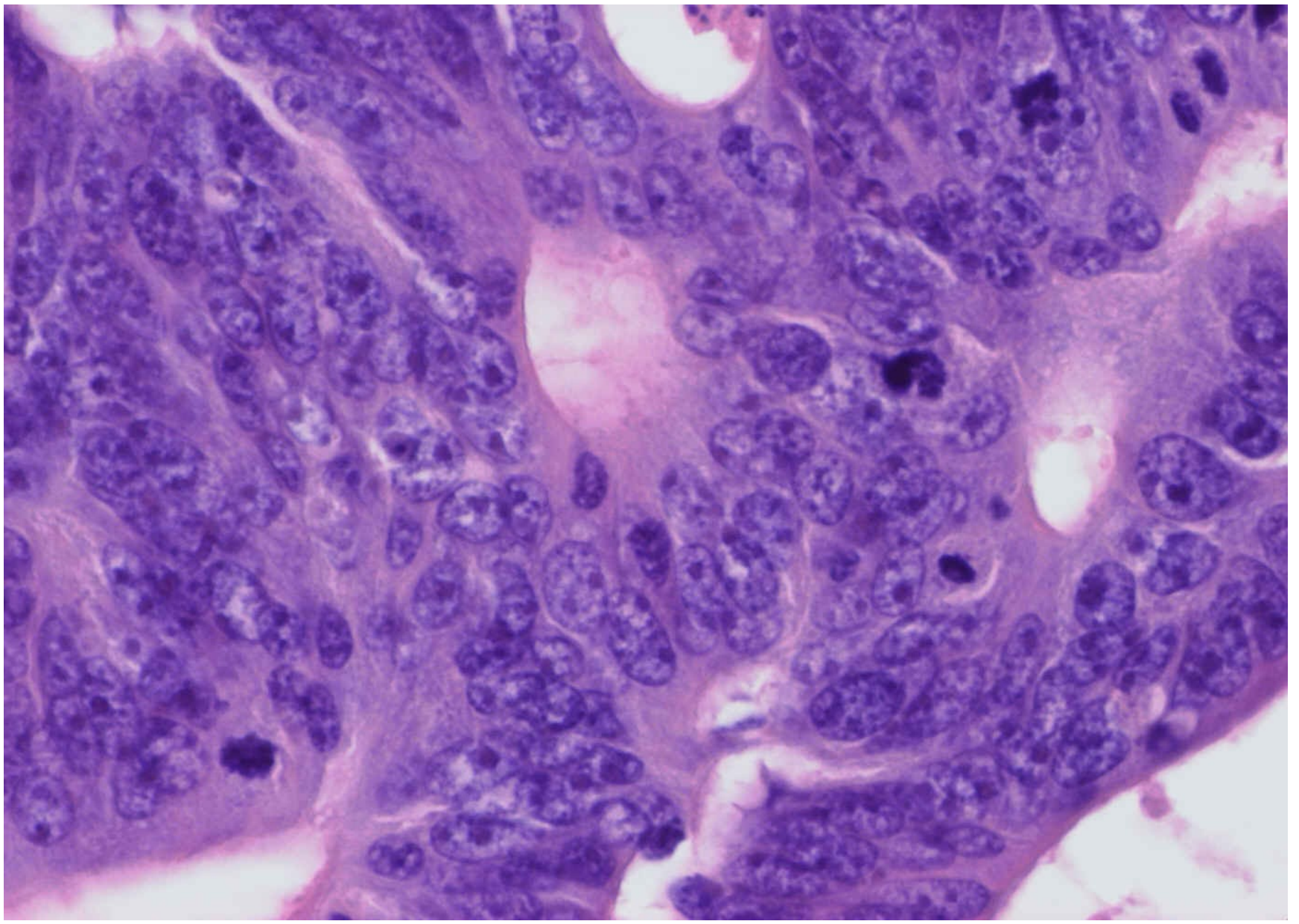
Intestinal adenocarcinoma – intramucous growth



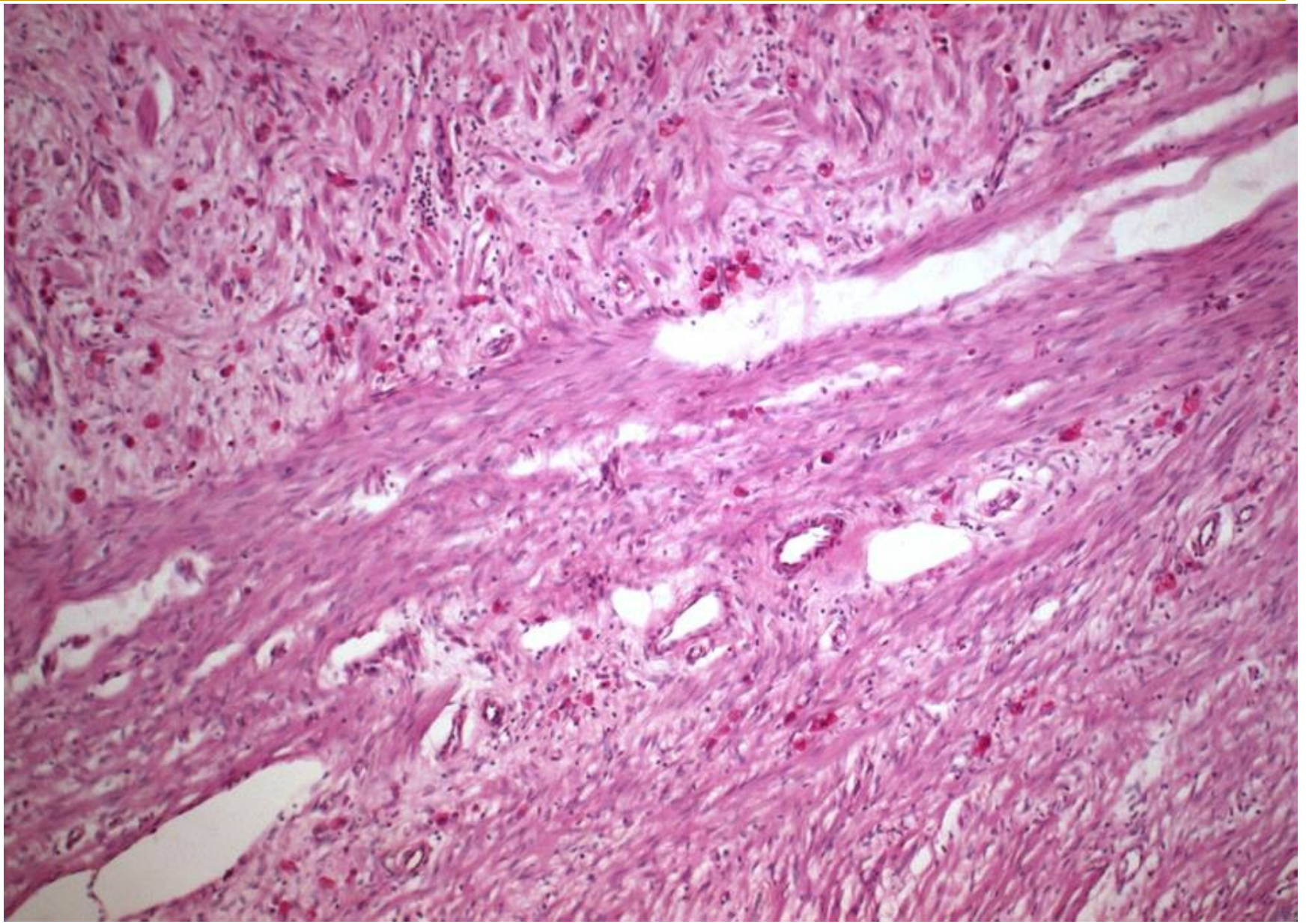
Intestinal adenocarcinoma – invasion into the pericolic fat tissue



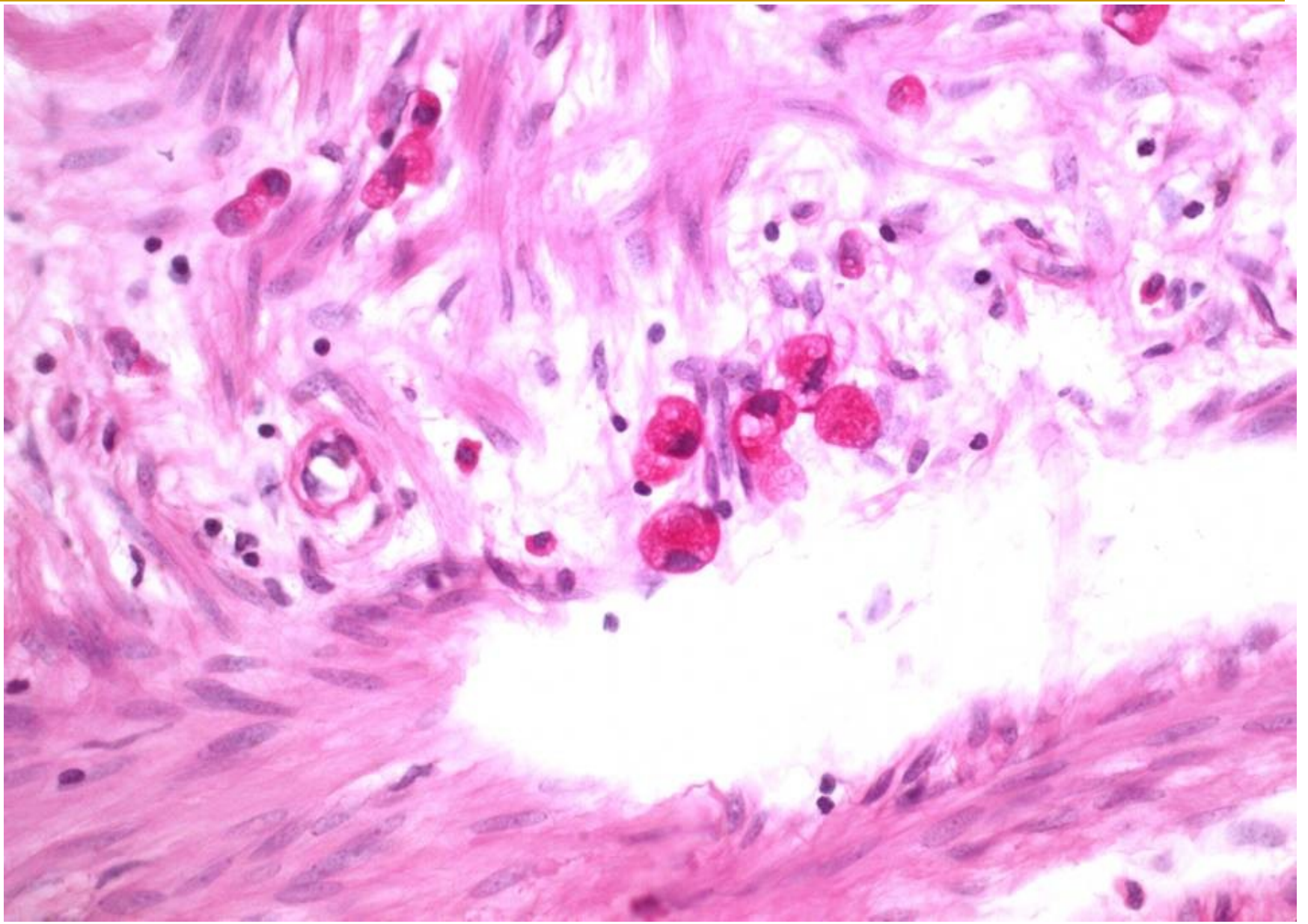
Intestinal adenocarcinoma – detail



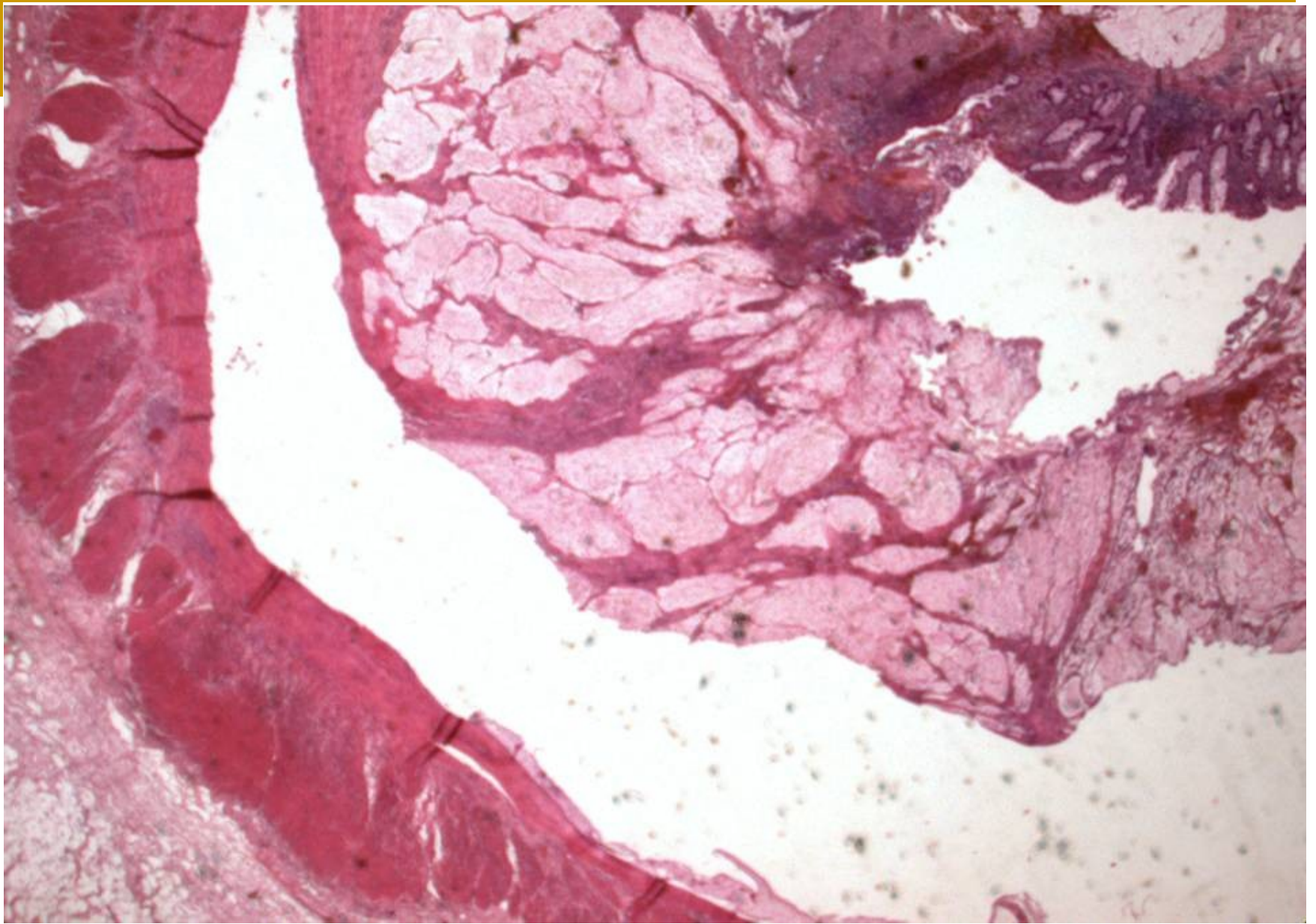
Intestinal adenocarcinoma – detail – atypia, mitotic figures



Poorly cohesive adenocarcinoma – PAS reaction

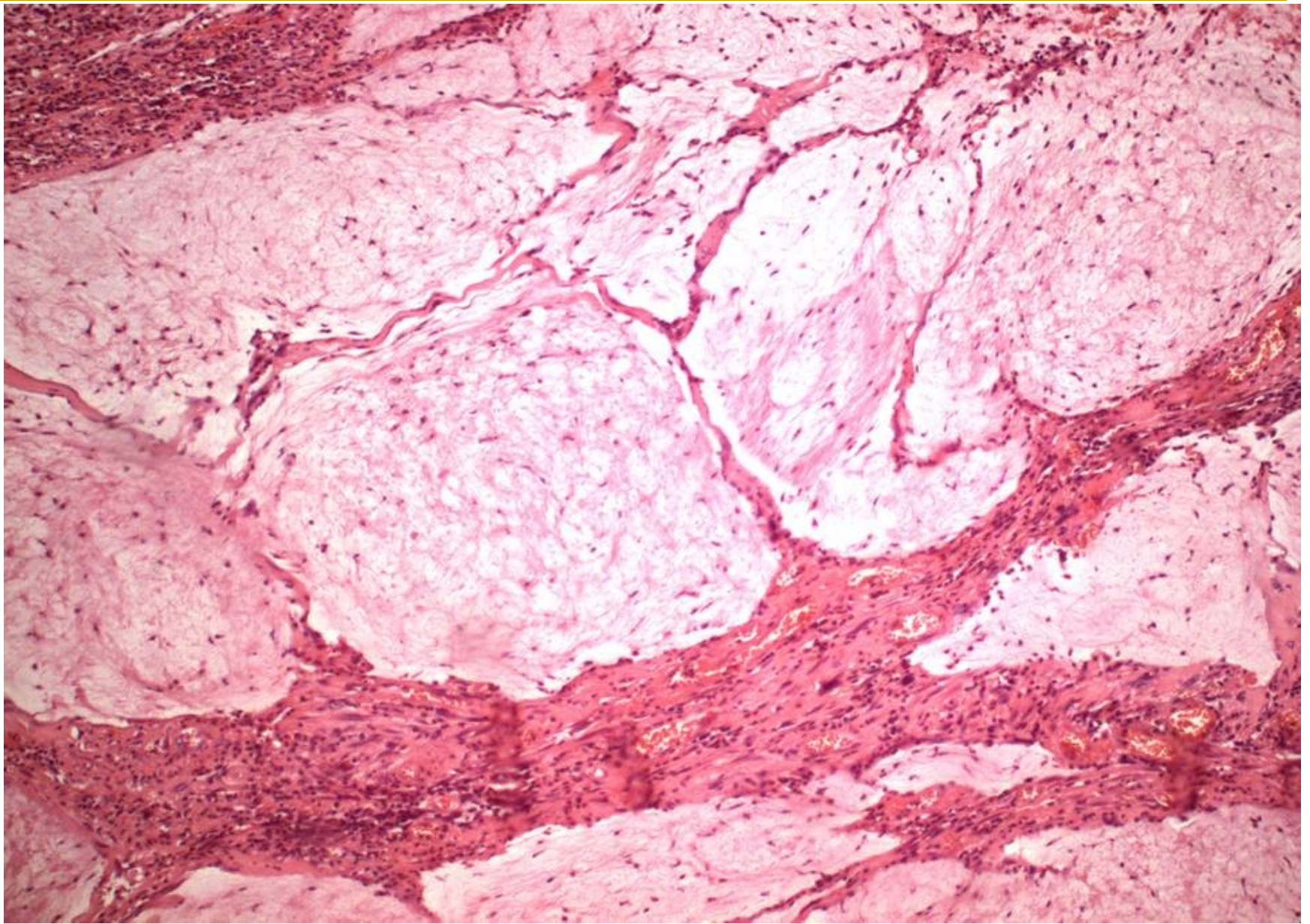


Poorly cohesive adenocarcinoma - PAS reaction - detail

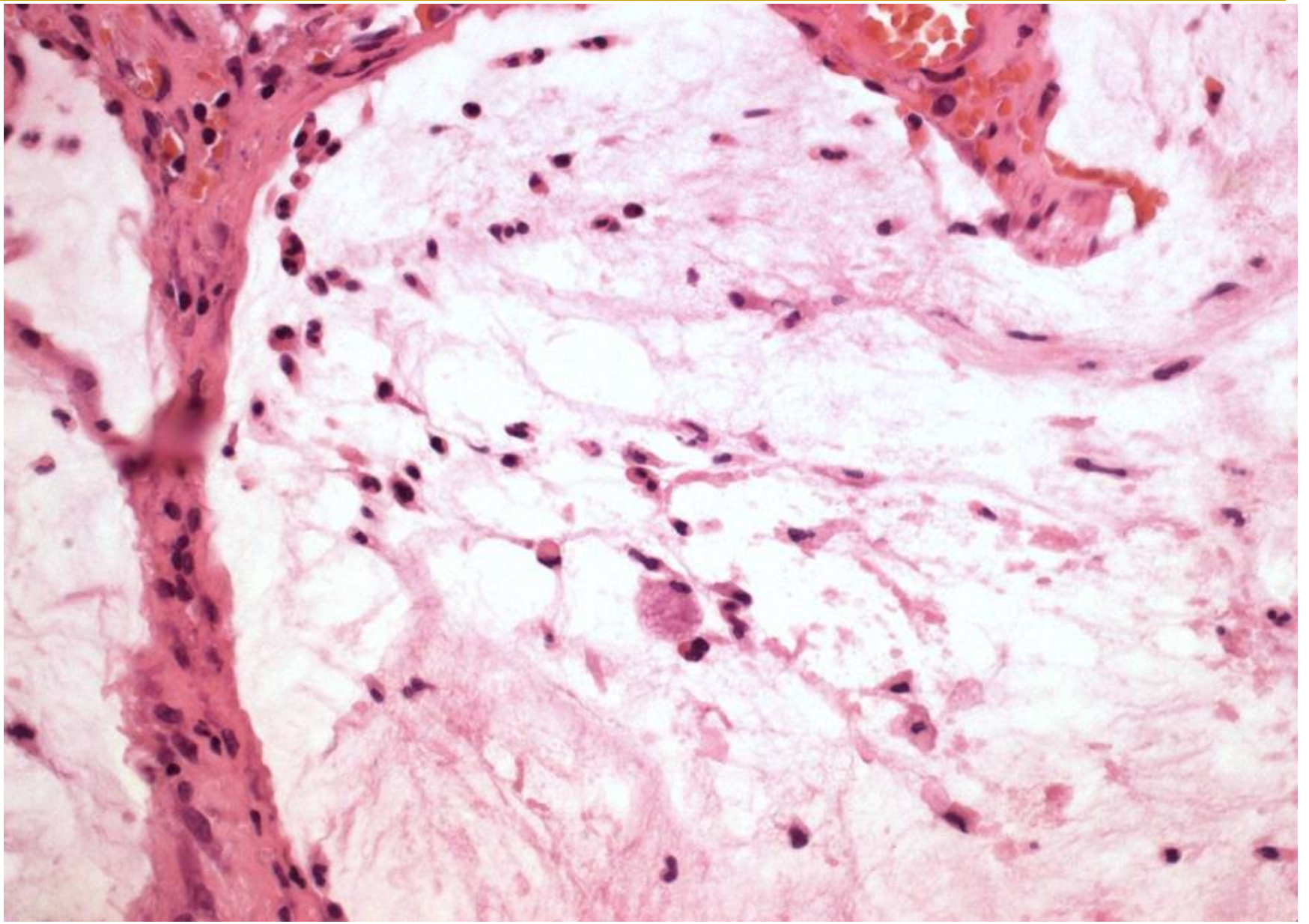


Mucinous adenocarcinoma (extracellular mucin production)





Mucinous adenocarcinoma – detail

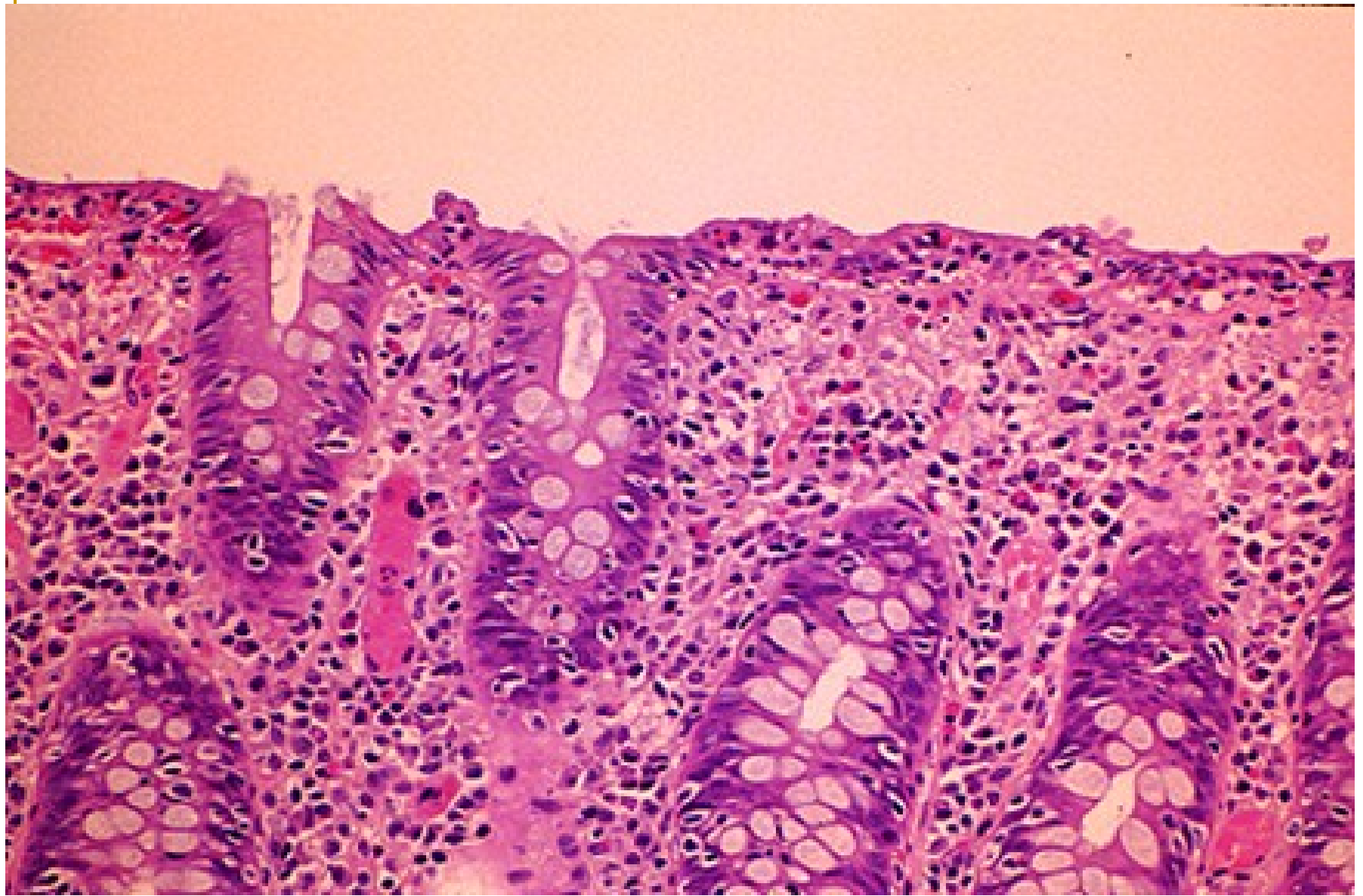


Mucinous adenocarcinoma – detail

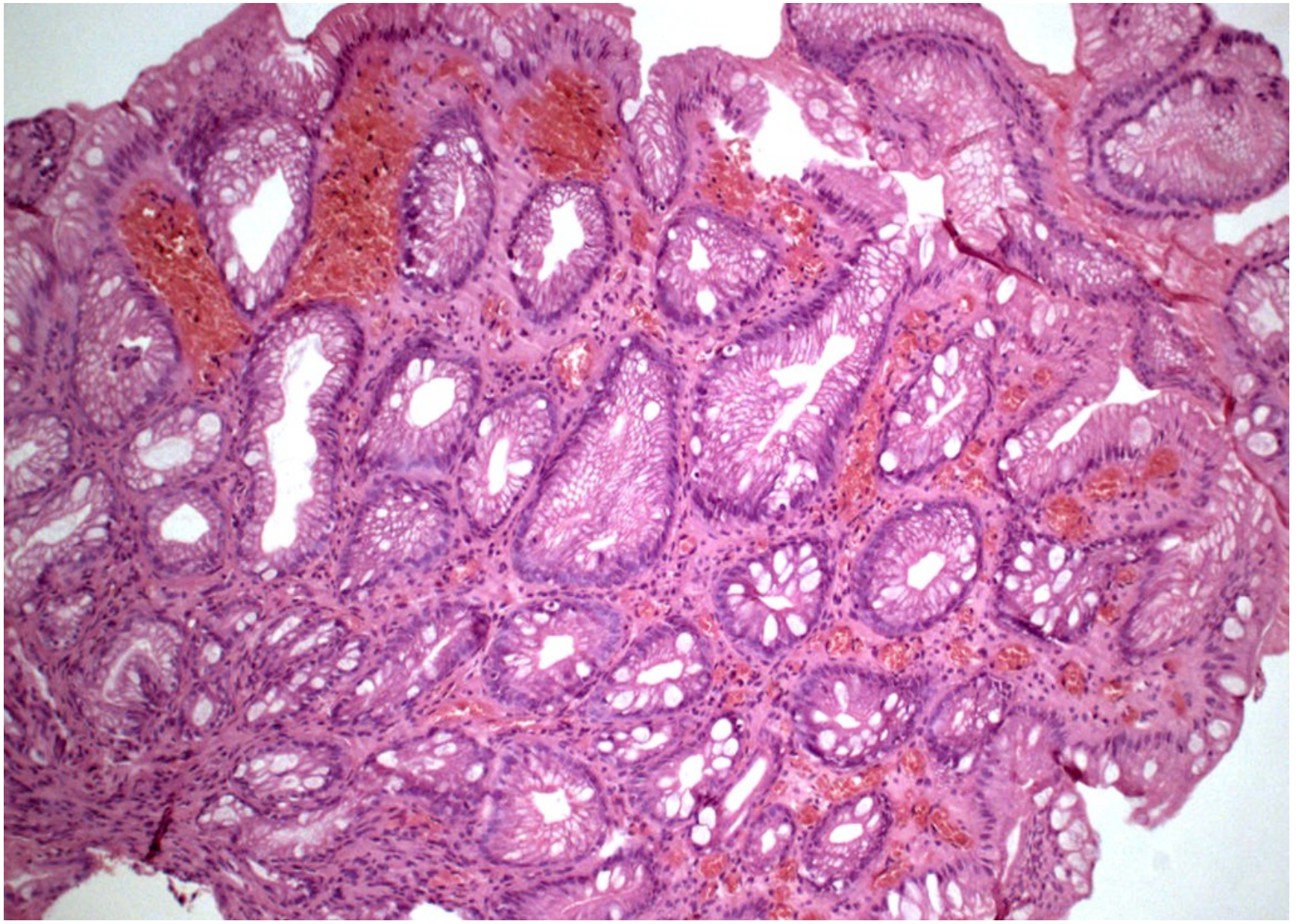
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# Microscopic colitis

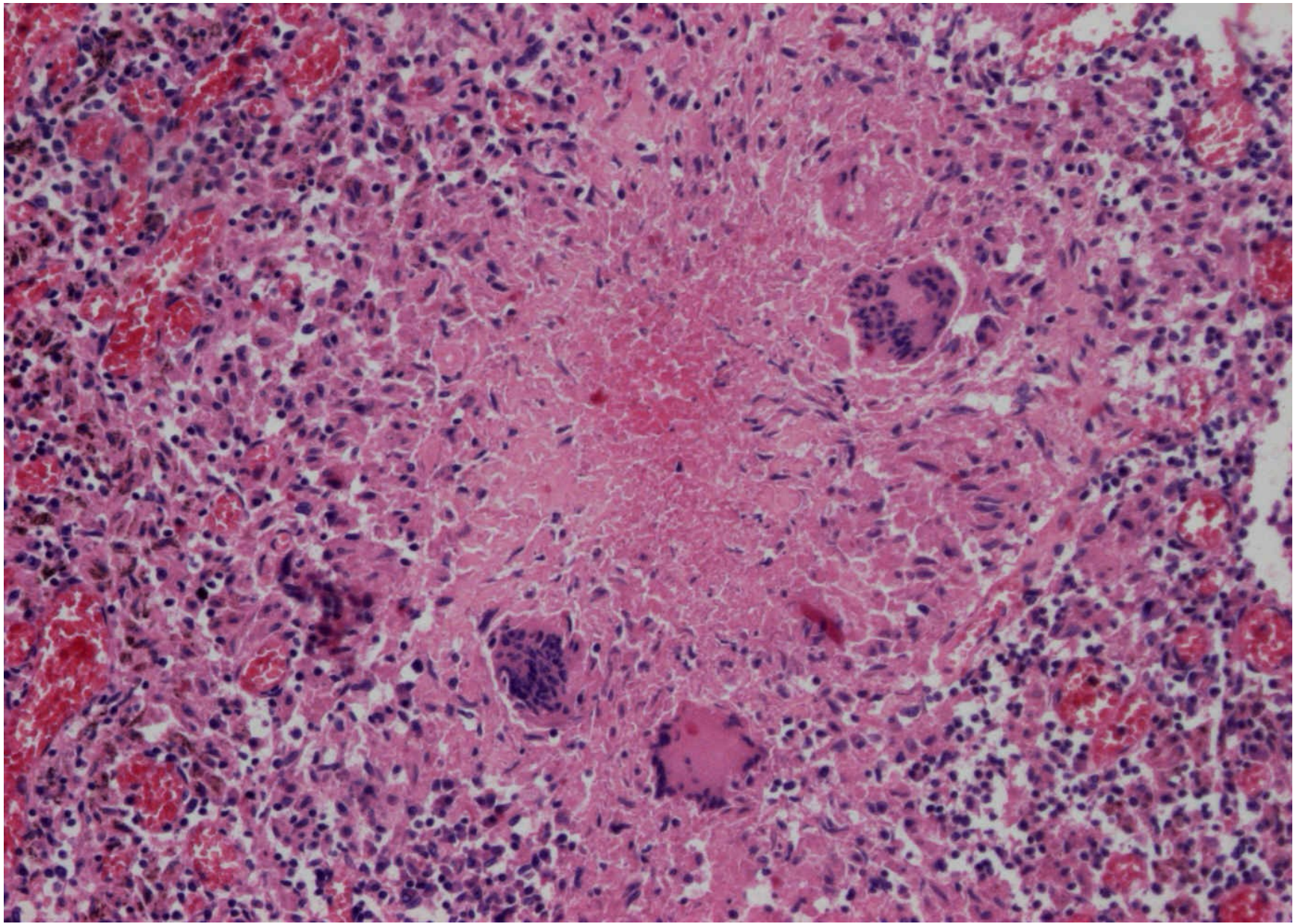
- Endoscopy reveals normal findings, normal mucosa. Histology is characteristic: collagenous colitis and lymphocytic colitis.  
**Collagenous colitis** is characterised by patches of bandlike collagen deposits directly under the surface epithelium.  
**Lymphocytic c.** is characterised by a prominent intraepithelial infiltrate of lymphocytes.
  - 3 to 20 attacks of watery nonbloody diarrhea per day, accompanied by cramping abdominal pain. These diseases often resist ordinary treatment and can cause dehydration. They show a strong associations with autoimmune diseases including celiac sprue, thyroiditis, arthritis and autoimmune gastritis.
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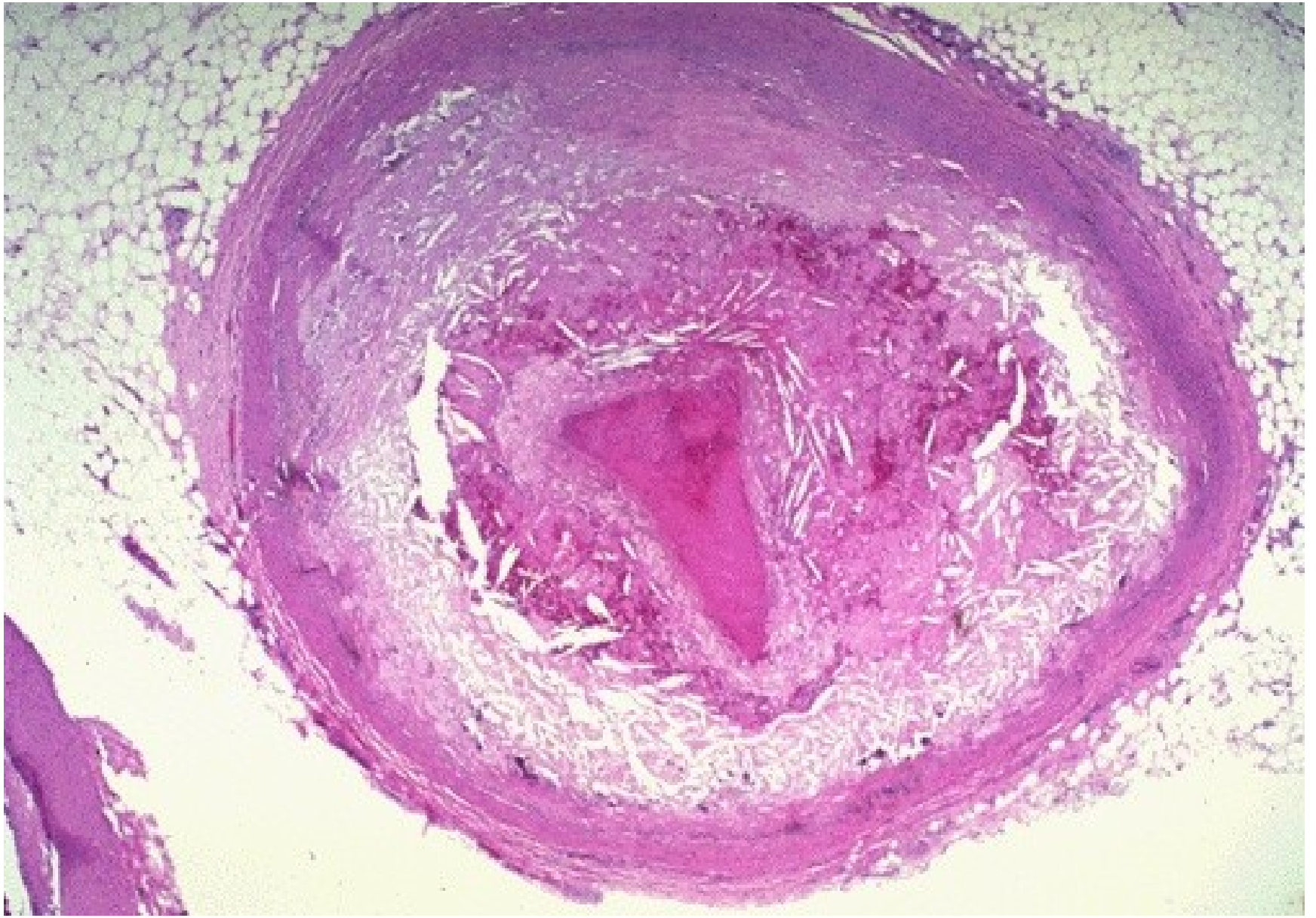




Esophagus – your diagnosis?

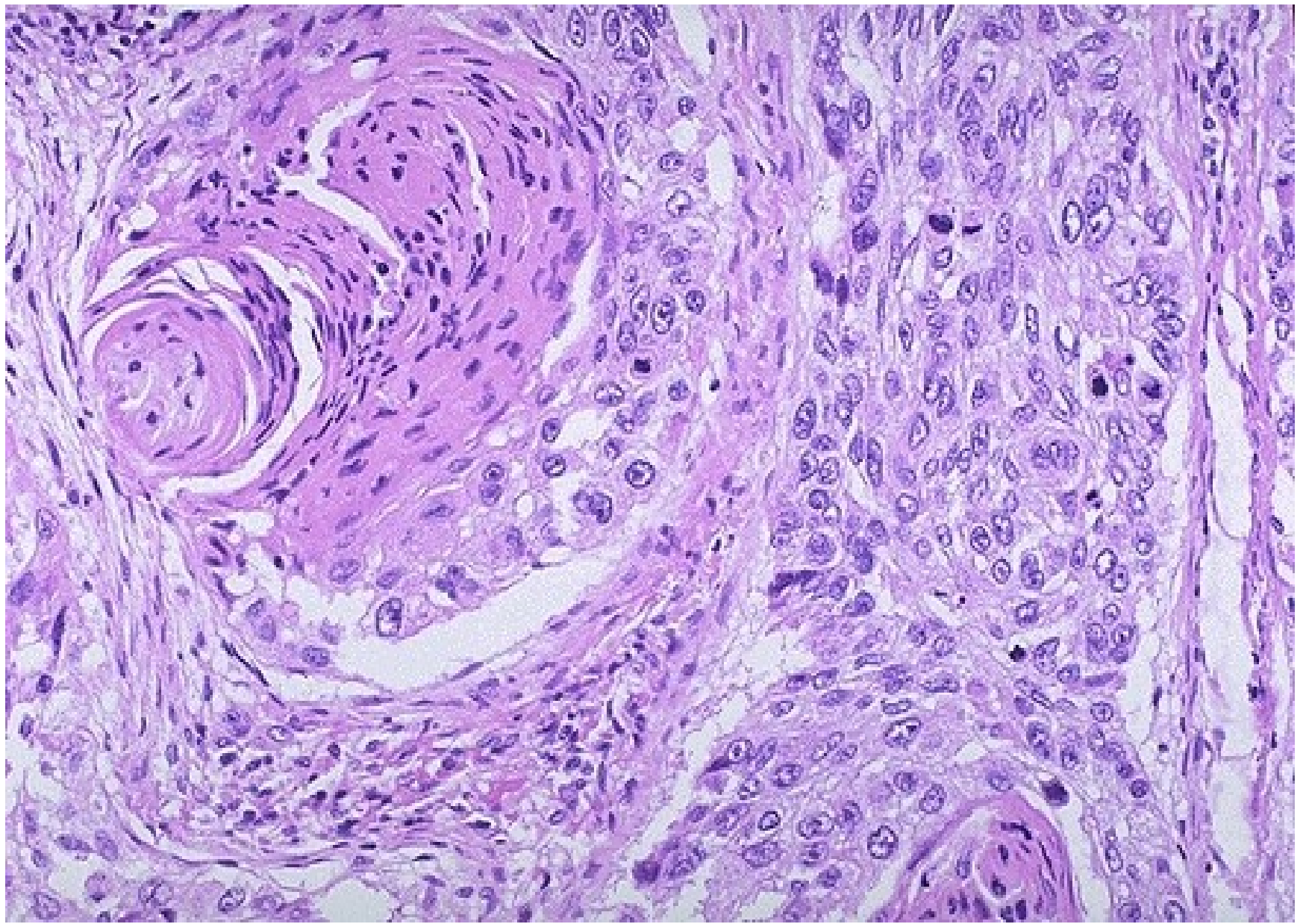


Lymph node – your diagnosis?

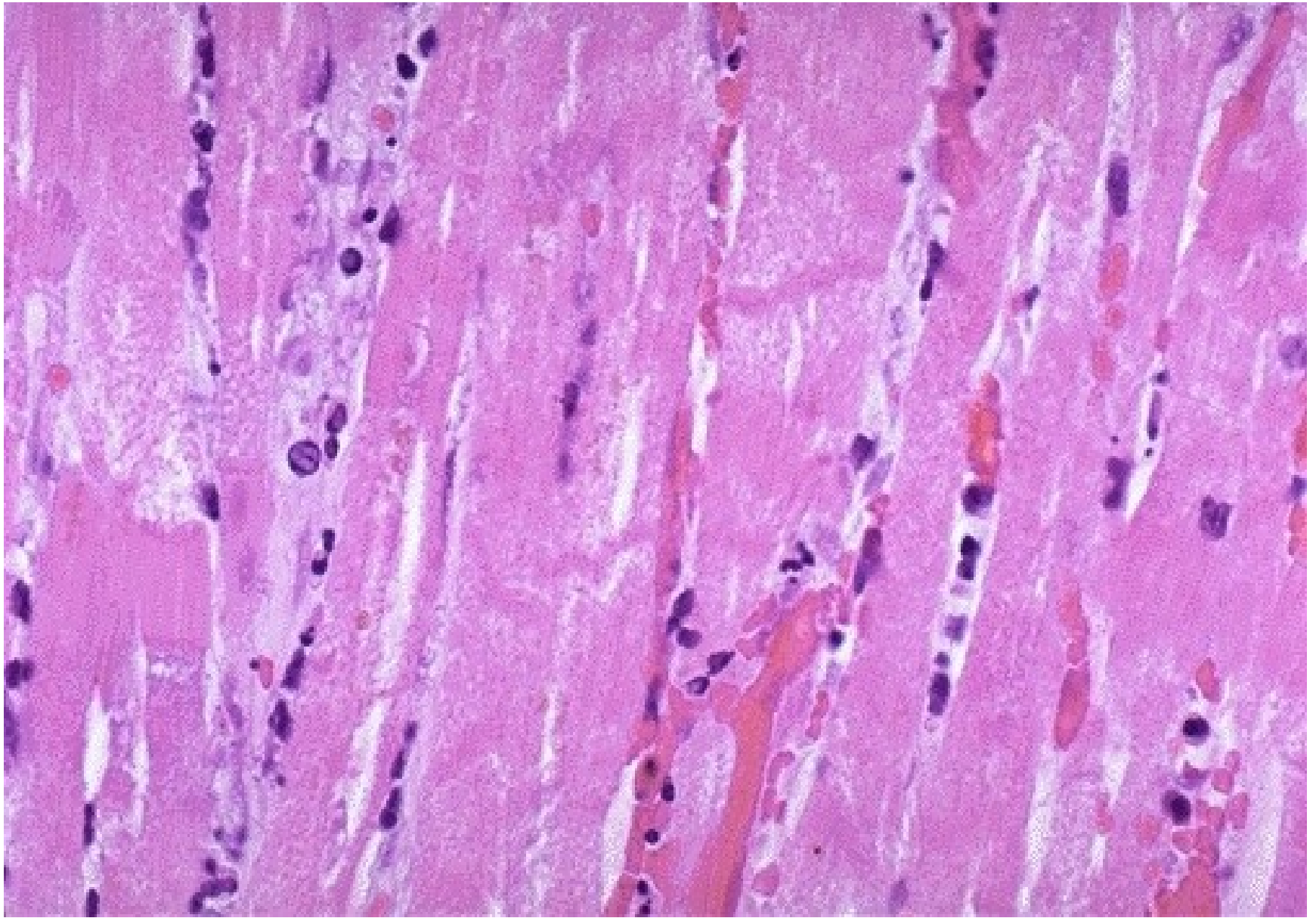


Blood vessel – your diagnosis?





Tumour – your diagnosis?



Myocardium – your diagnosis?

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Thank you for your attention

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