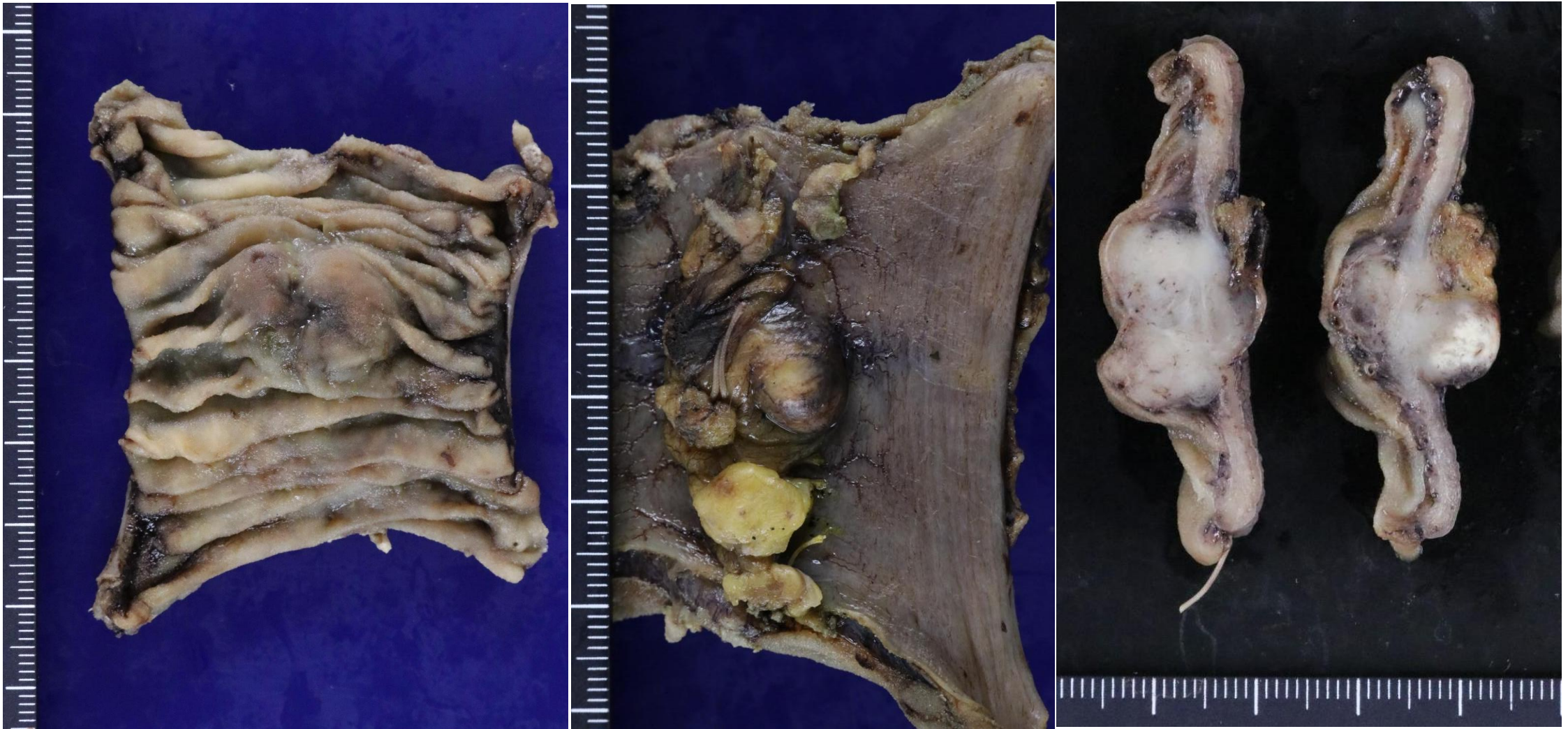


Gross appearance of gastrointestinal stromal tumor

Gastrointestinal stromal tumor (GIST), the most common mesenchymal tumor of the gastrointestinal tract, arises from the interstitial cells of Cajal within the myenteric plexus of the muscularis propria. GIST is most common in the stomach (60%), followed by the jejunum/ileum (30%), duodenum (4-5%), rectum (4%), colon and appendix (1-2%) and esophagus (< 1%). GIST of bowel origin may often have a malignant potential. Microscopically, three types are observed: spindle (70%), epithelioid (20%) and mixed (10%). Immunohistochemical markers include c-kit (CD117), CD34 and DOG1. Calponin, SMA and even cytokeratin may be positive. GIST is caused by mutations in proto-oncogene KIT on the exon 11. Imatinib mesylate (Gleevec), a tyrosine kinase inhibitor of KIT and PDGFR α , is an effective molecular targeted oral medication. The prognosis depends on the tumor size, mitotic rate and the site of origin. Grossly, GIST shows a well circumscribed, intramural lesion, centered within the muscularis propria. Mucosal ulceration is common in the large-sized tumor. Fleshy, tan-pink cut surfaces may show hemorrhage or cystic change. The size ranges from 0.4 to 40 cm with the mean of 6 cm.

Ref.: Bell P, Findeis-Hosey J. GIST. PathologyOutlines.com website. 2025.

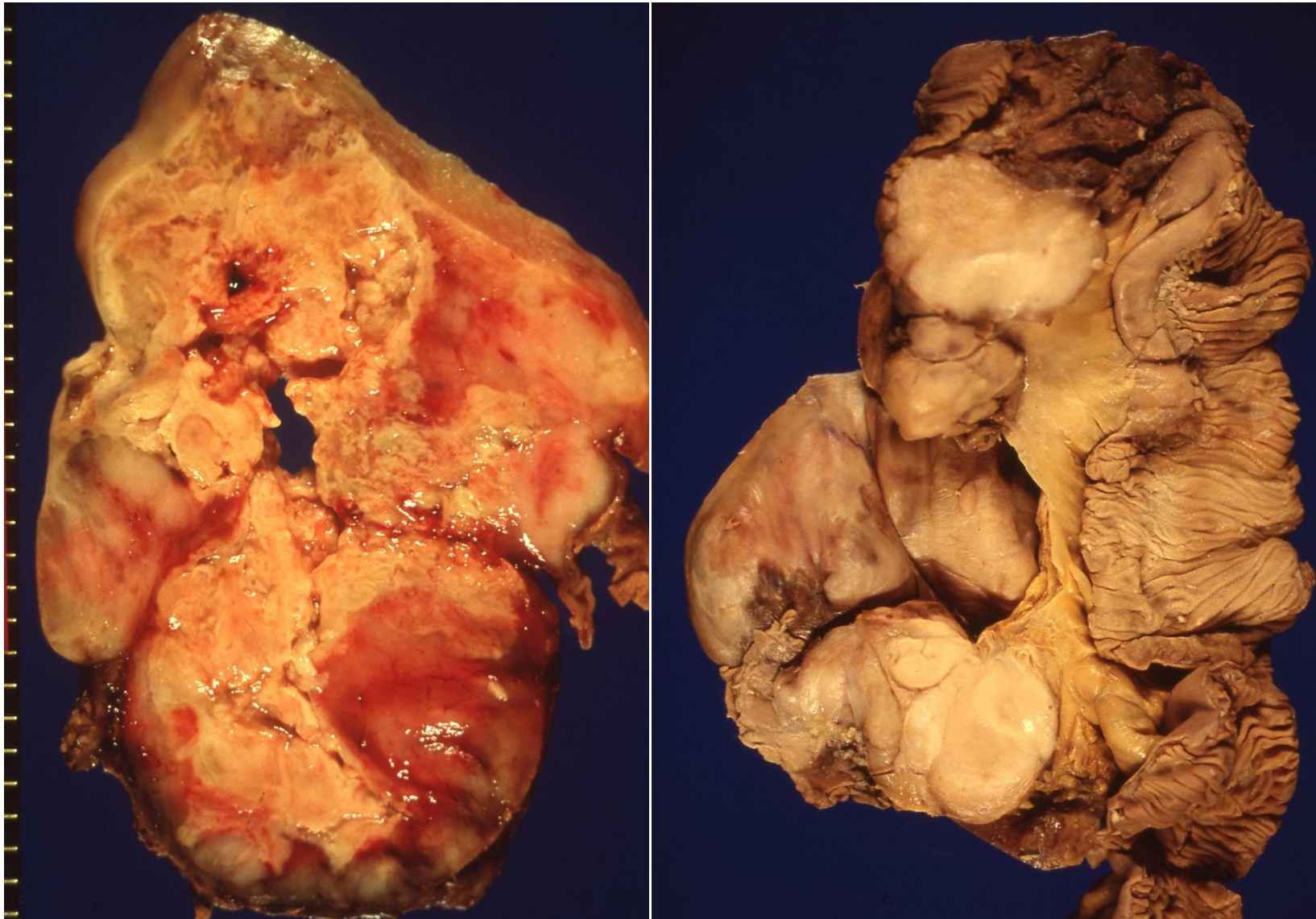
<https://www.pathologyoutlines.com/topic/stomachGIST.html>



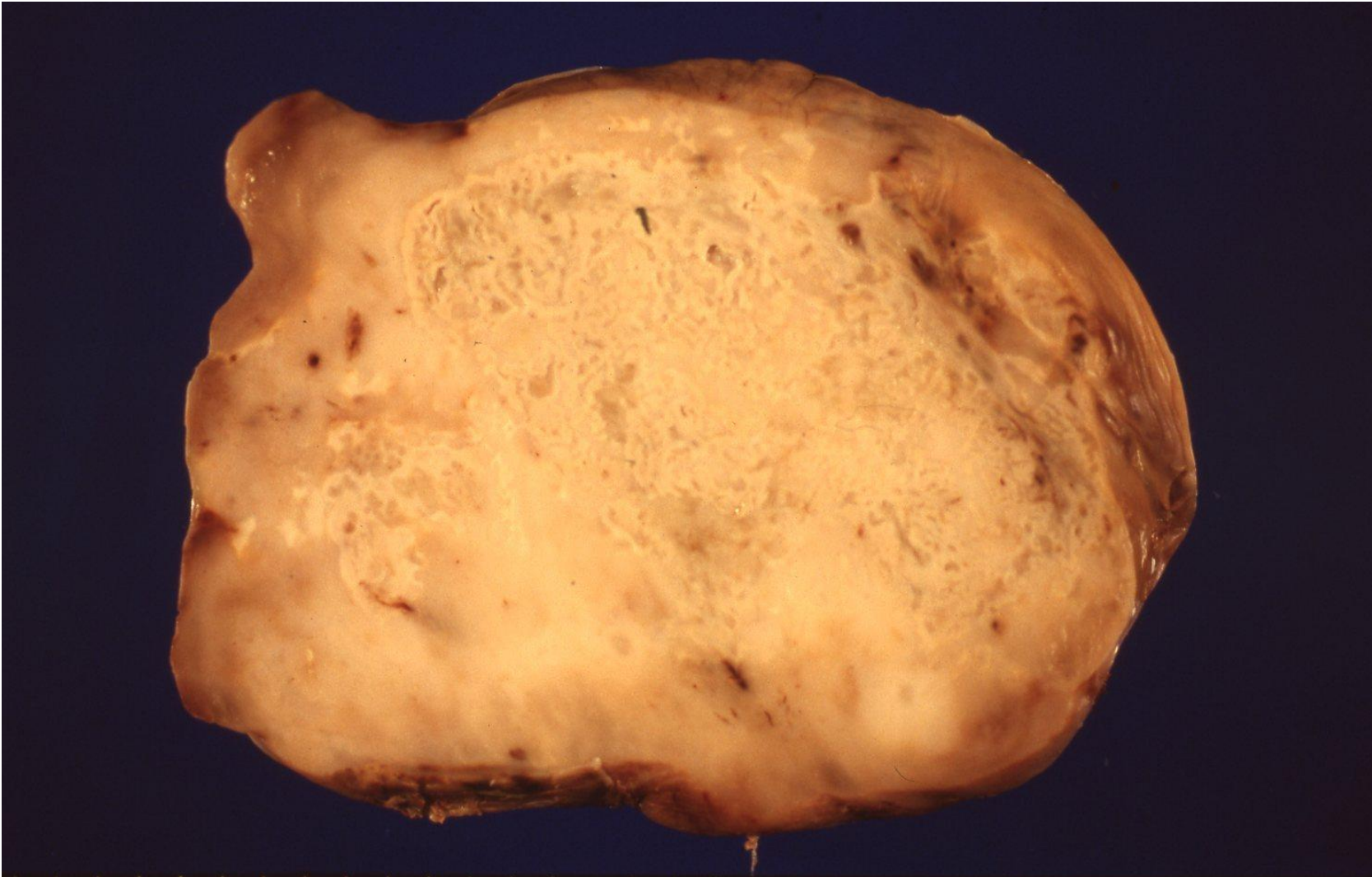
Gross appearance of jejunal GIST after formalin fixation, seen in an 83 y-o male patient. A 2 cm-sized, gray-colored tumor arising from the proper muscle layer is associated with mucosal ulceration.



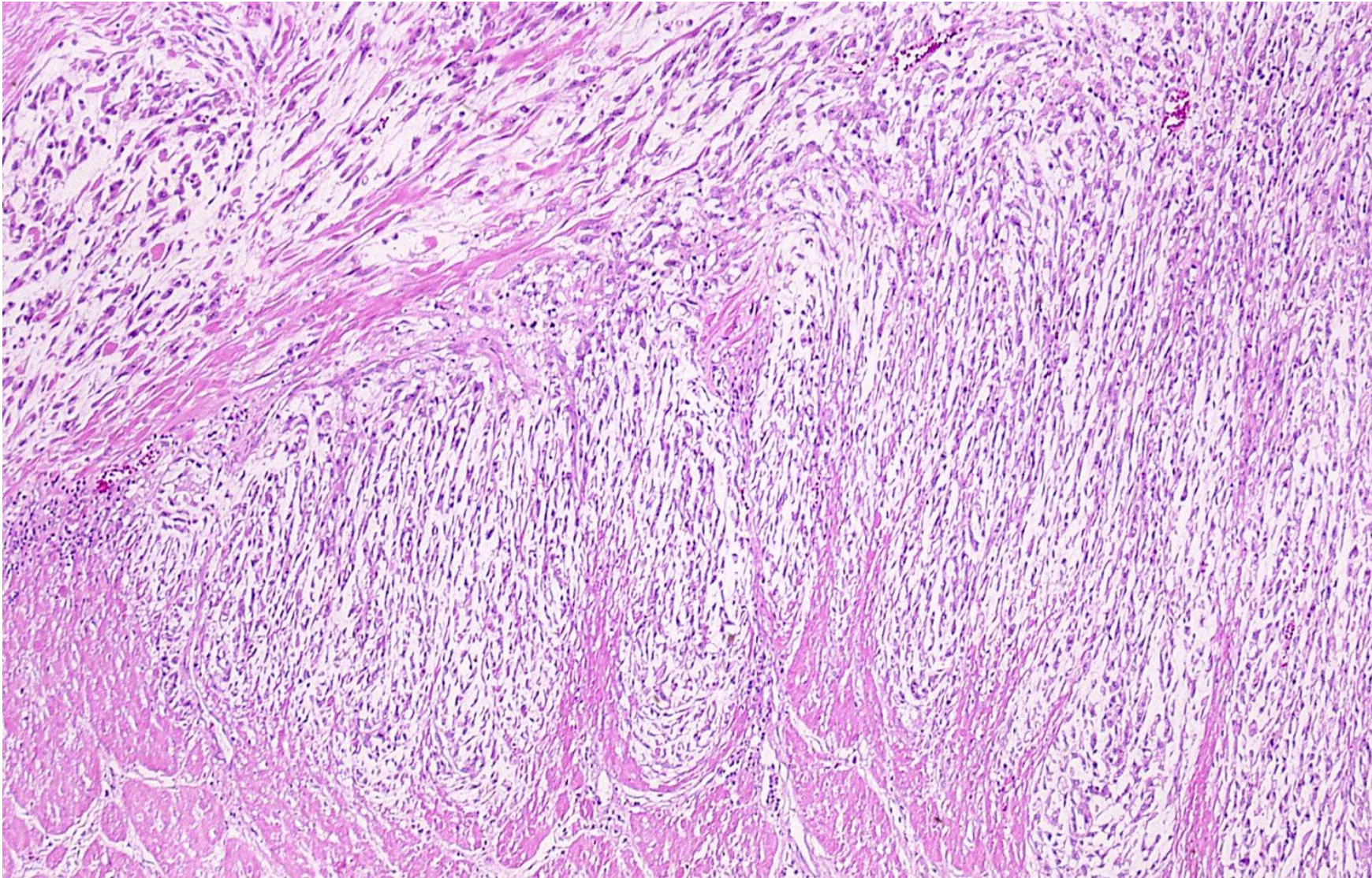
Gross appearance of jejunal GIST, seen in a 66 y-o male patient. An 8 cm-sized tumor arising from the proper muscle layer protrudes as a subserosal mass.



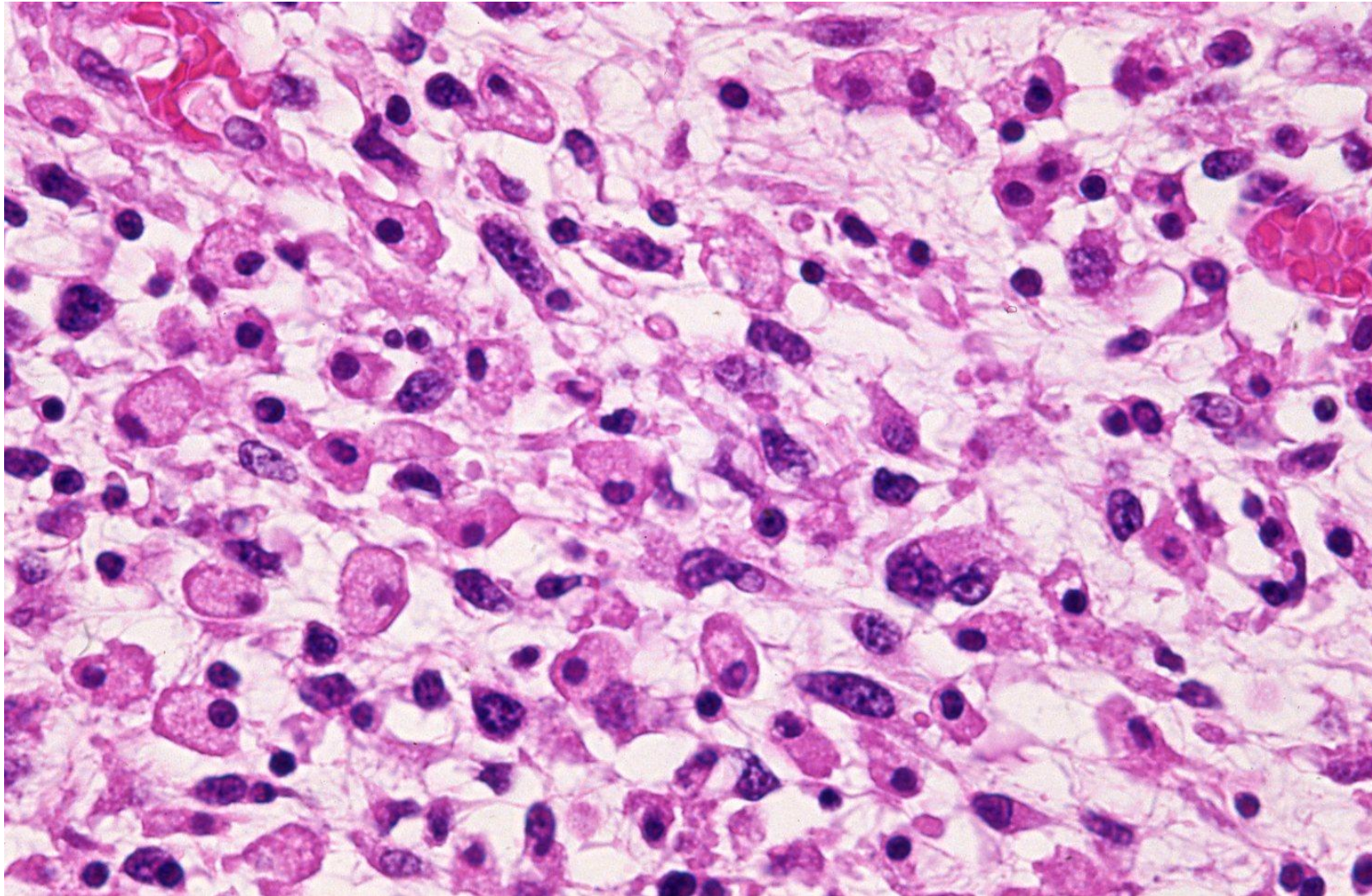
Gross appearance of jejunal malignant GIST, seen in a male patient aged 60's. Cut surfaces of a 13 cm-sized tumor arising from the proper muscle layer protrudes as a subserosal mass (left: before fixation, right: after formalin fixation) . Necrosis is frequently associated.



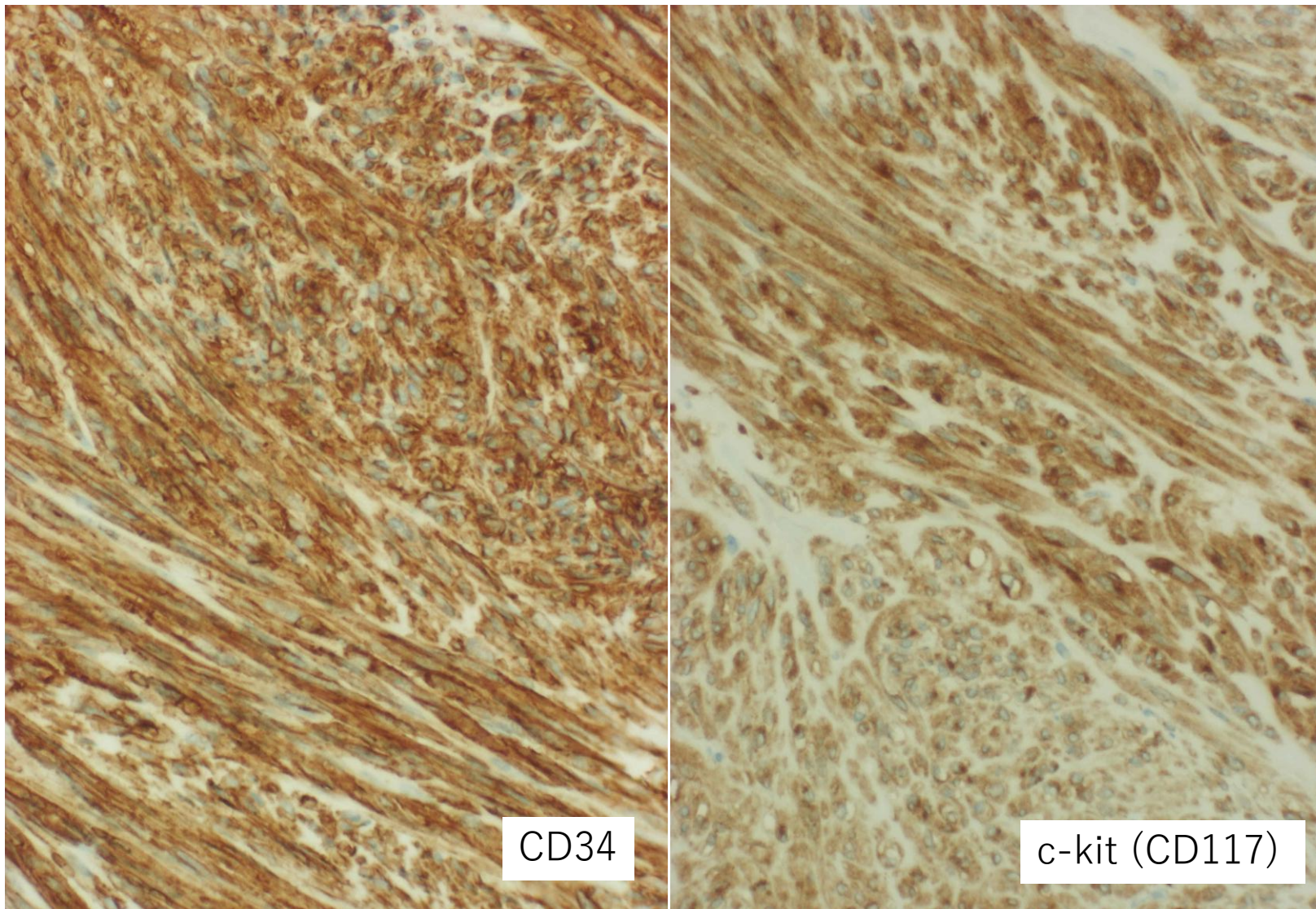
Gross appearance of jejunal malignant GIST, seen in a male patient aged 60's. A cut surface of the 13 cm-sized subserosal tumor arising from the proper muscle layer shows multifocal necrosis (after formalin fixation). The site and size indicate a malignant potential.



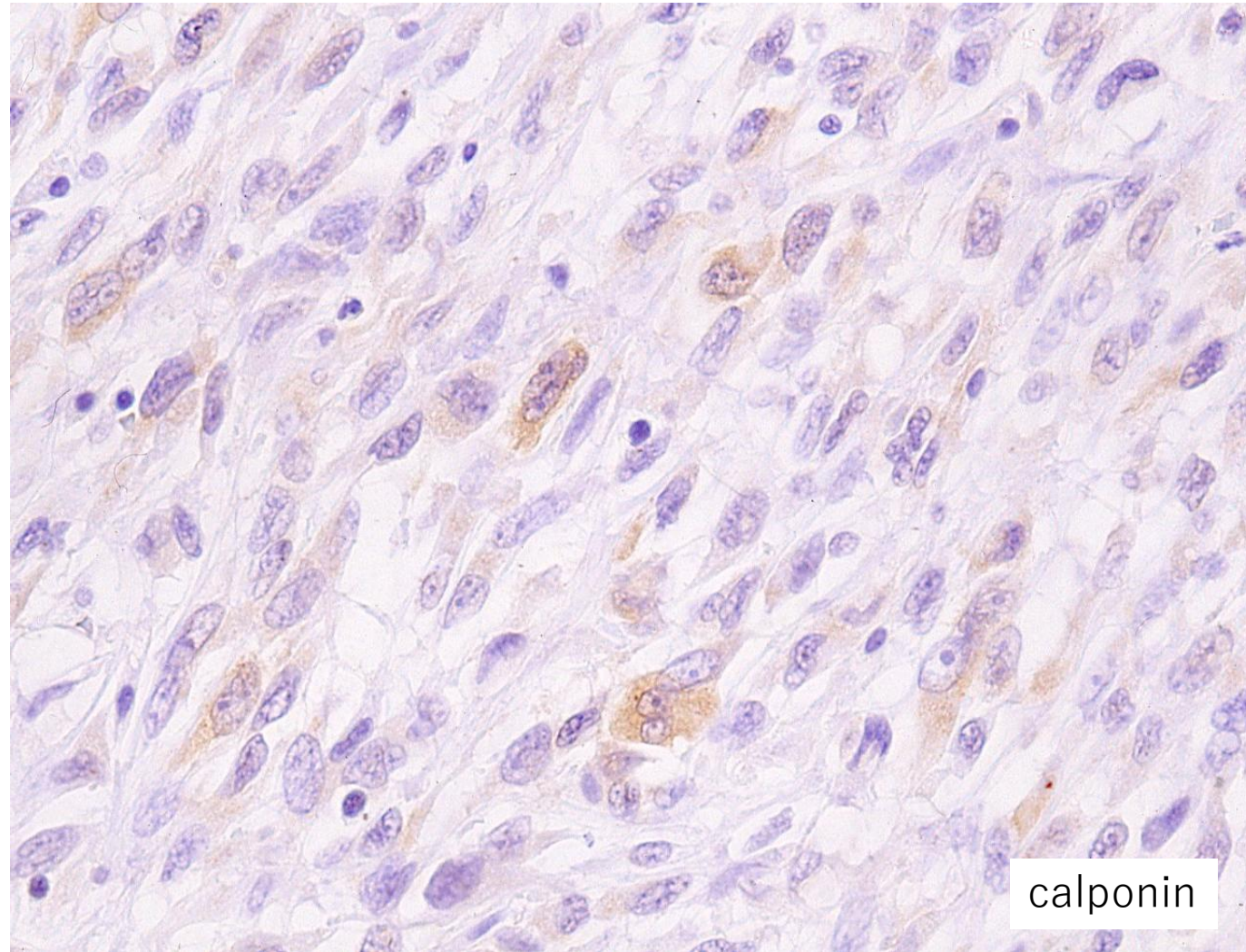
Jejunal malignant GIST, seen in a male patient aged 60's. Invasive growth of spindled cells with high cellularity is seen among the proper muscle layer (H&E-1).



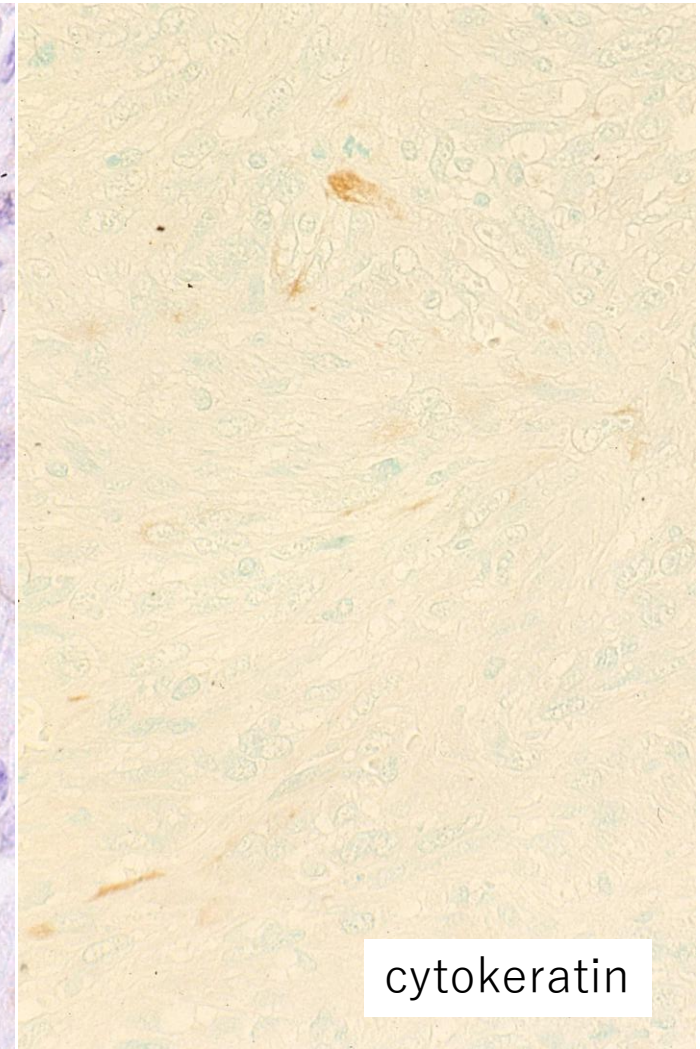
Jejunal malignant GIST, seen in a male patient aged 60's. Invasive growth of atypical spindled and epithelioid cells is seen. High cellularity and loss of cellular cohesiveness are observed, indicating a malignant potential (H&E-2).



Jejunal malignant GIST, seen in a male patient aged 60's. Immunohistochemically, the tumor cells diffusely express CD34 (left) and c-kit (CD117 (right)). The confirmation of c-kit on the tumor cells indicates that Imatinib mesylate (Gleevec) treatment is effective (immunostaining for CD34 and c-kit).

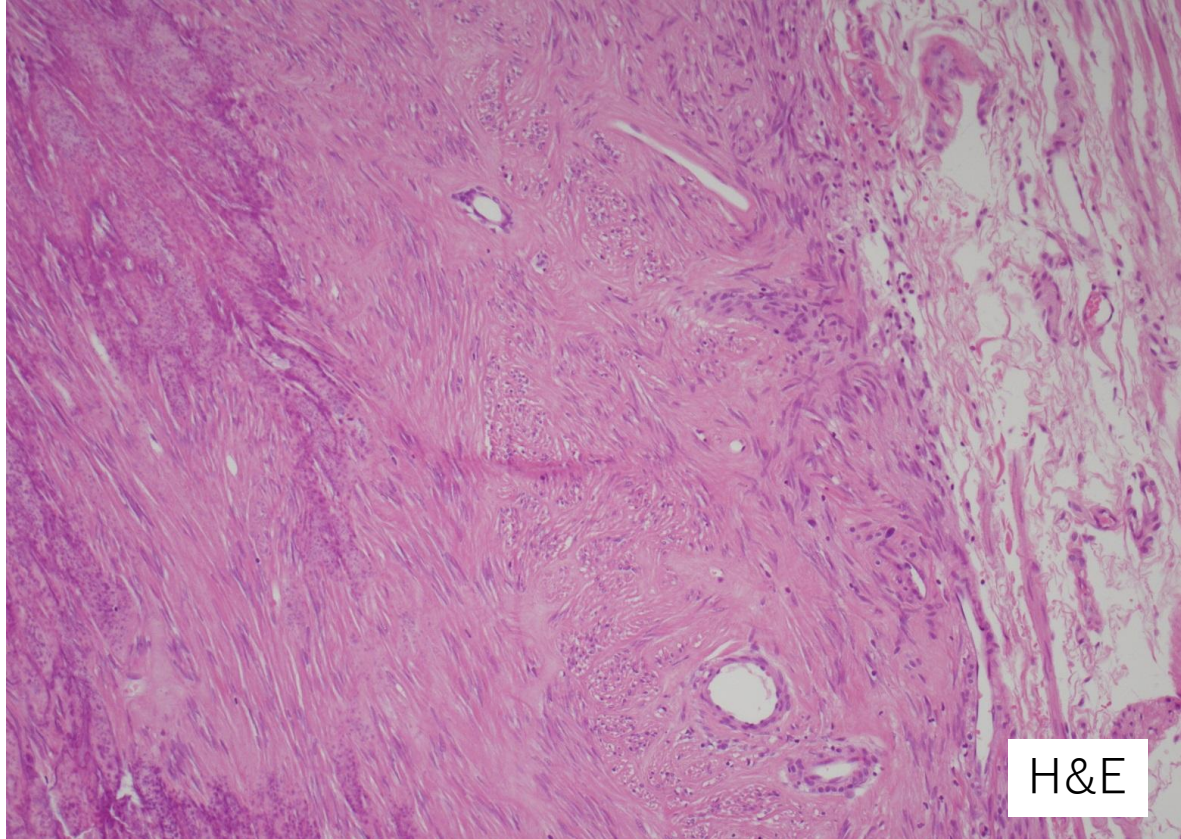
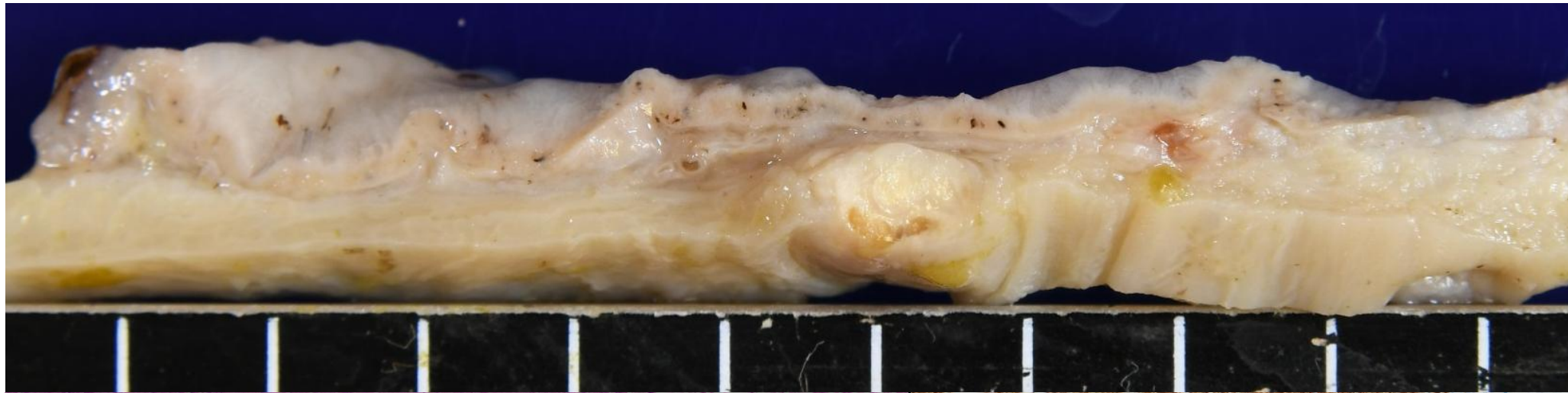


calponin

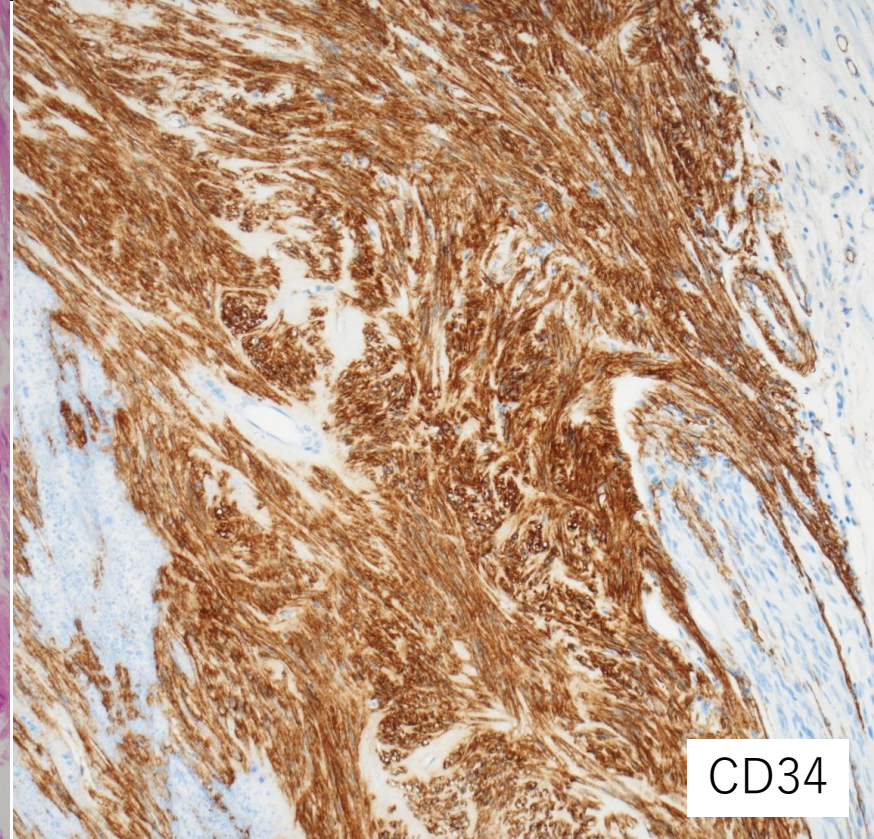


cytokeratin

Jejunal malignant GIST, seen in a male patient aged 60's. Immunohistochemically, some of the tumor cells express calponin (left). SMA may also be positive. A few tumor cells are immunoreactive for cytokeratin detected with a monoclonal antibody KL-1 (right) (immunostaining for calponin and cytokeratin KL-1).



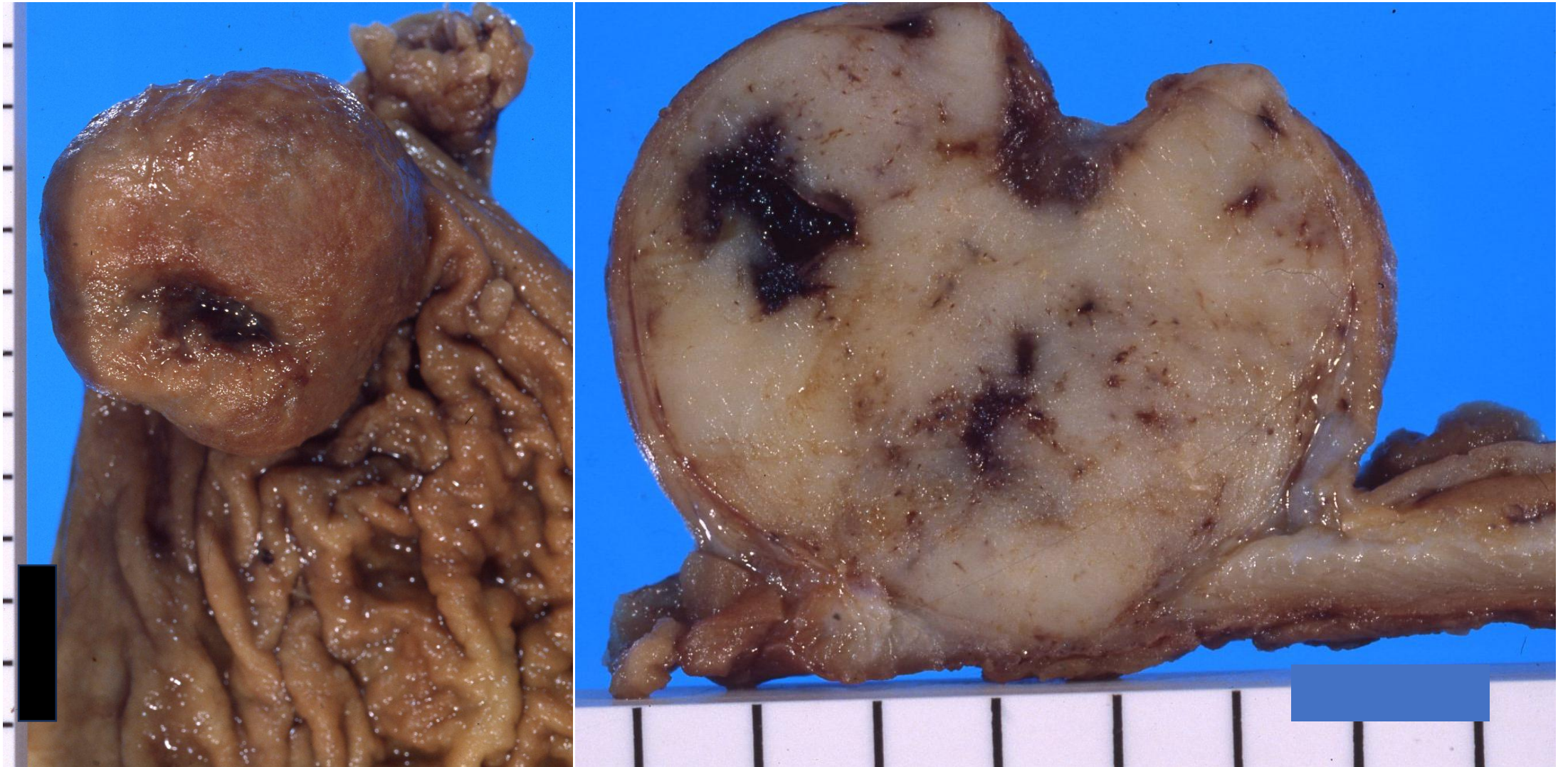
H&E



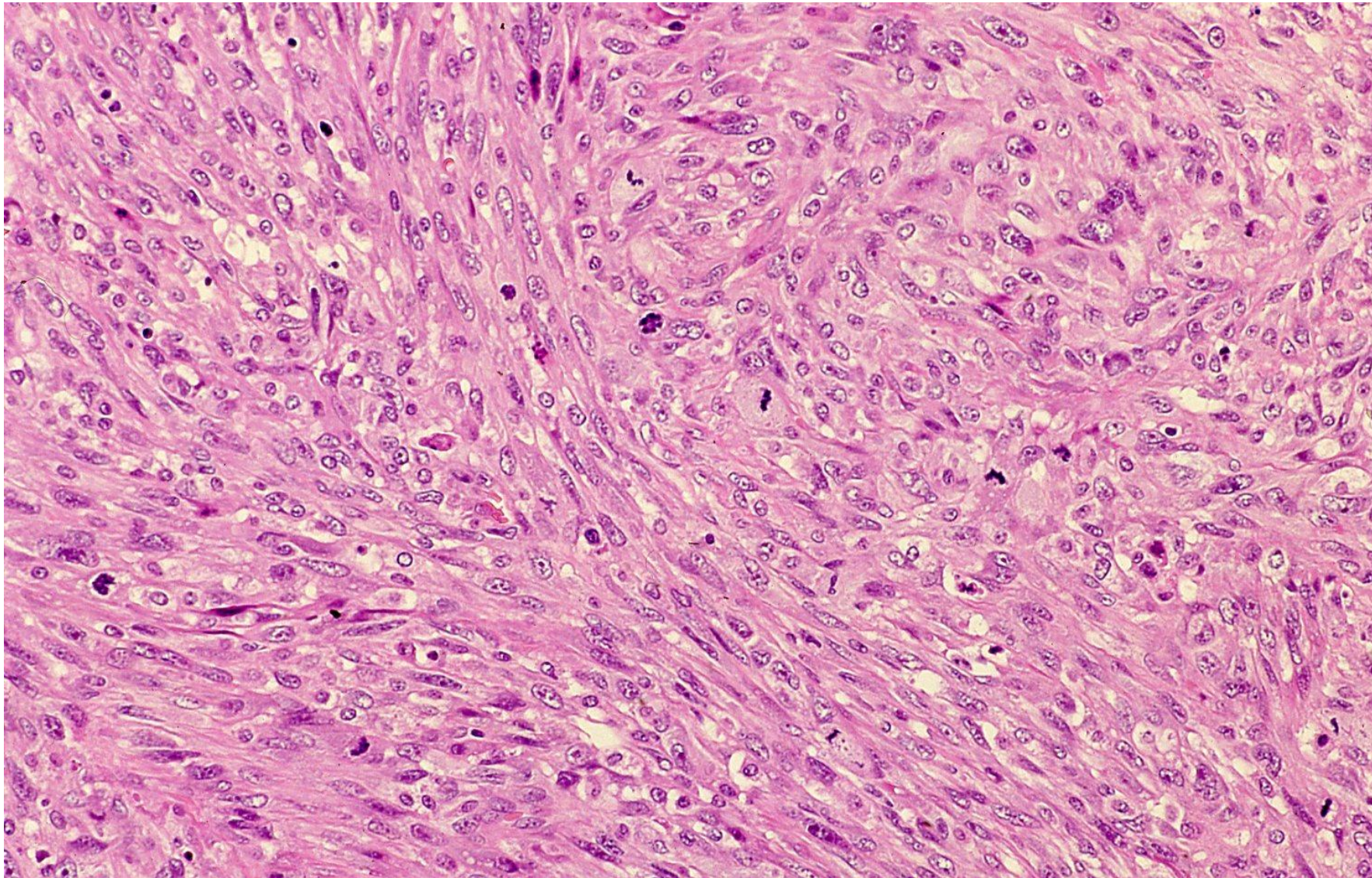
CD34

**Benign
GIST of the
stomach**

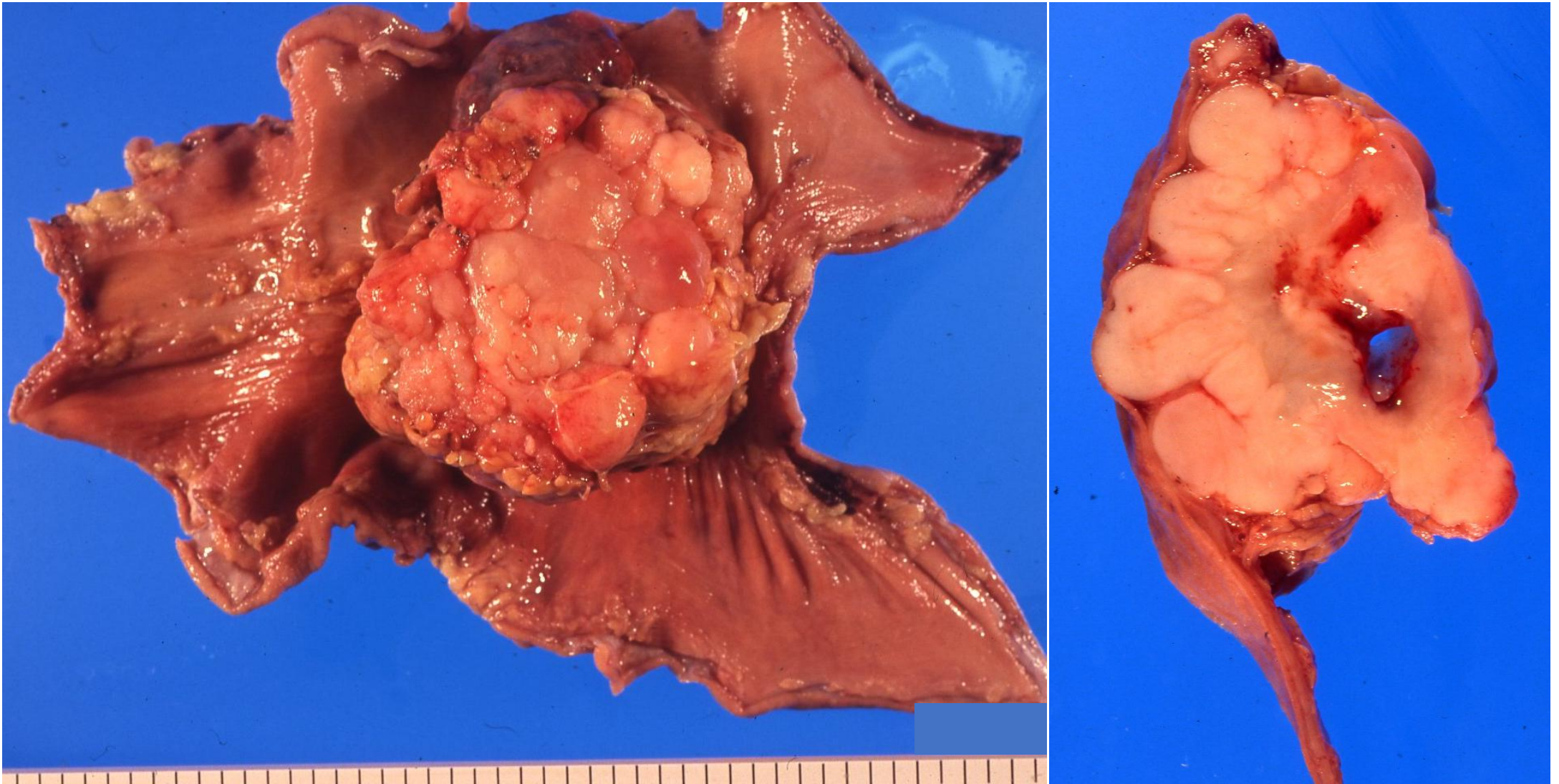
seen in a 54 y-o male patient. The size is small (5 mm in diameter), categorized in a benign tumor. No cellular atypia is seen, and CD34 is positive.



Malignant GIST of the stomach seen in a 55 y-o male patient. A 28 mm-sized polypoid solid tumor is associated with central ulceration. Hemorrhagic change is noted on the cut surface (gross appearance after formalin fixation).



Malignant GIST of the stomach seen in a 55 y-o male patient. A 28 mm-sized polypoid solid tumor microscopically show mild to moderate cellular pleomorphism and active mitoses, indicating a malignant feature (H&E).



Another malignant GIST of the stomach seen in a 60 y-o male patient. A 10.5 cm-sized lobulated and exophytic mass shows hemorrhagic necrosis with focal cystic change. A high mitotic rate is observed microscopically.

Gastric GIST: risk of disease progression

Size	≤5 mitoses/50 HPF	>5 mitoses/50 HPF
>10.1 cm	Moderate	High
5.1-10.0 cm	Low	High
2.1-5.0 cm	Very low	Moderate
≤2 cm	No	No

Ref.: Miettinen M, Lasota J. Gastrointestinal stromal tumors: pathology and prognosis at different sites. Semin Diagn Pathol 2006; 23(2): 70-83. doi: 10.1053/j.semdp.2006.09.001