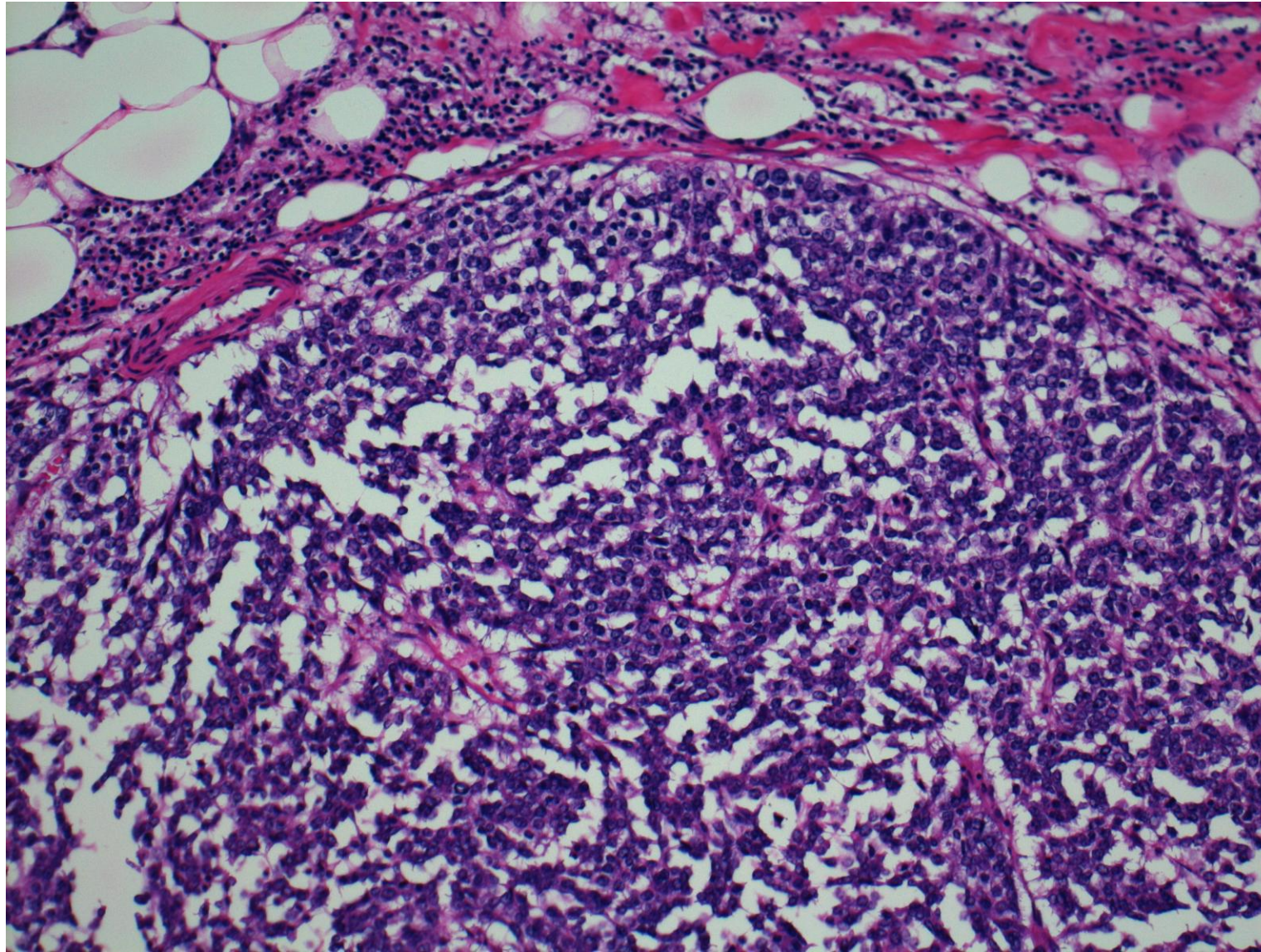


Anaplastic carcinoma of the rectum

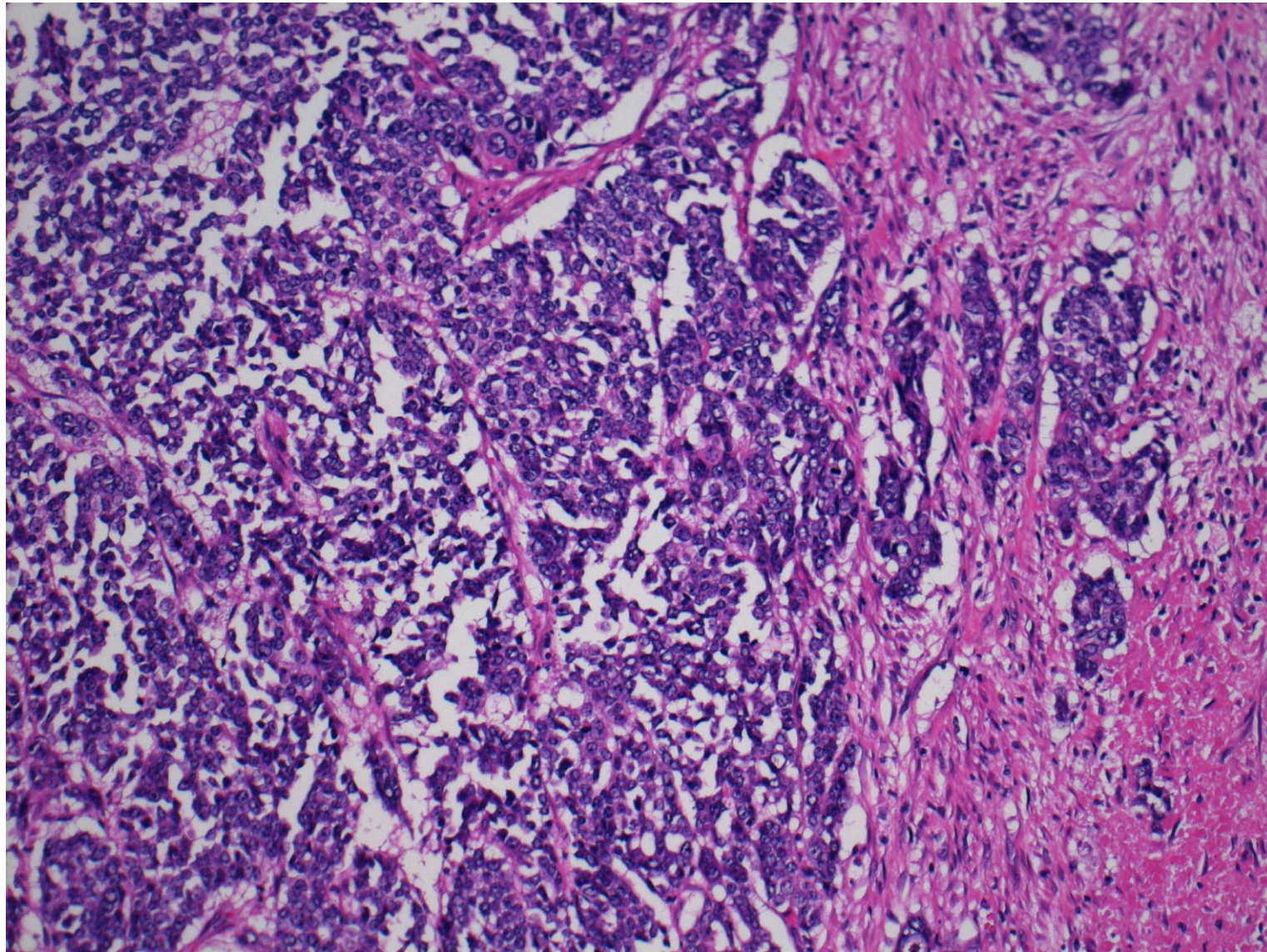
Anaplastic carcinoma of the colon is a rare and highly malignant variant of colon cancer, microscopically composed of sheets of undifferentiated tumor cells with frequent mitoses, absence of gland formation and negativity for mucin production. Immunostaining reveals positivity of cytokeratin and vimentin. EMA may also be expressed. Negative markers include CEA, AFP, S-100 protein, HMB45, LCA (CD45), and neuroendocrine markers. Ultrastructurally, there may be intercellular tight junctions, focal surface microvilli, and apical terminal webs or long rootlets of microfilaments. No neuroendocrine granules are identified.

A surgically removed rectal malignancy in a 78 y-o female patient revealed sheet-like solid growth of small-sized atypical cancer cells. Trabecular arrangement is focally observed. Coagulation necrosis is easily noted. Immunohistochemically, the tumor cells are diffusely positive for CK7 and focally for CK20. Most tumor cells express NCAM (CD56), while synaptophysin and chromogranin A were negative. Ki-67 labeling index was very high (>80%). The diagnosis should be anaplastic rectal carcinoma. Based upon the small size of the tumor cells and diffuse expression of CD56, the possibility of small cell neuroendocrine carcinoma should be considered, while ultrastructural study failed to identify neuroendocrine granules.

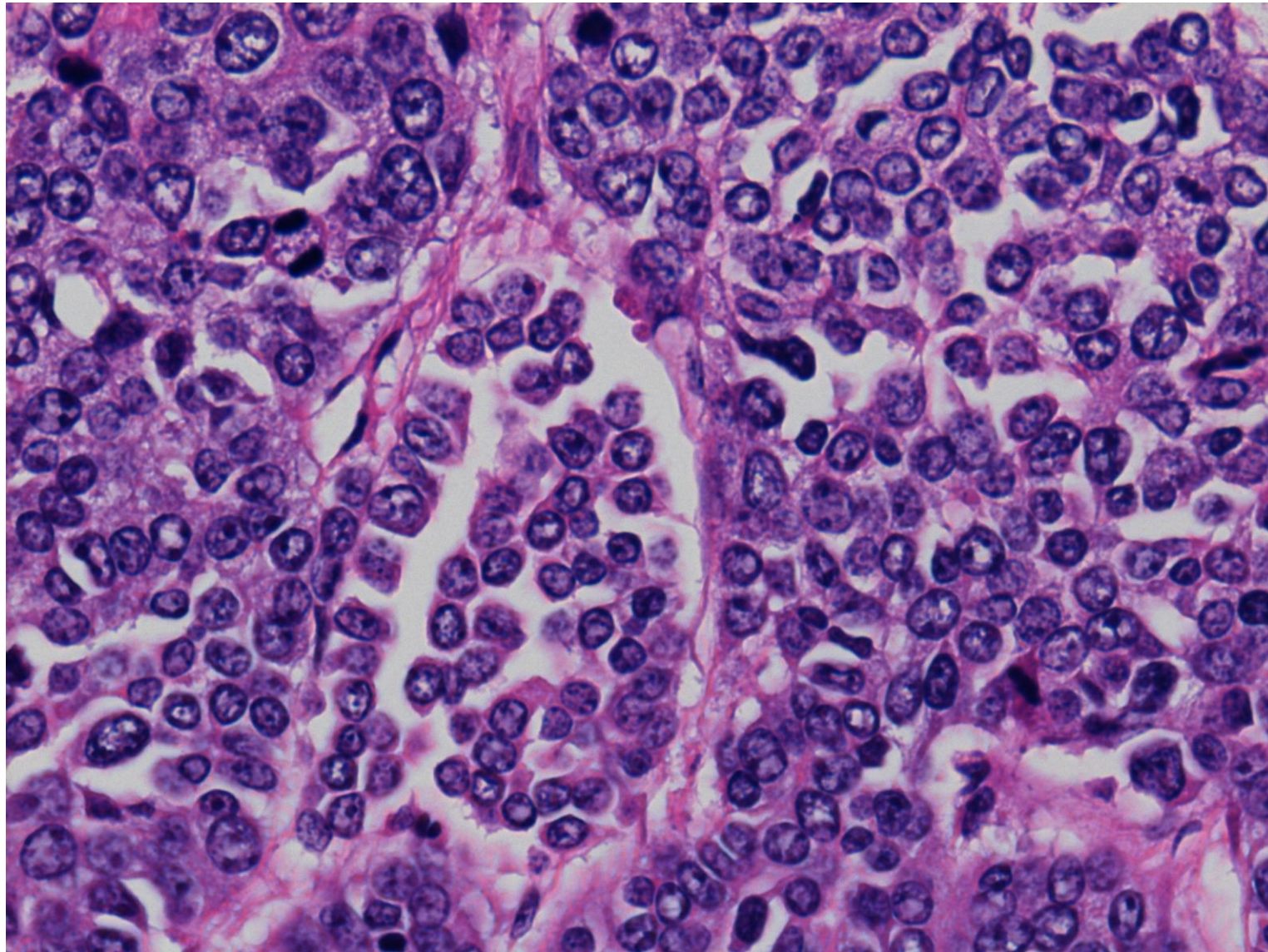
Ref. : Reyes CV, Siddiqui MT. Anaplastic carcinoma of the colon: clinicopathologic study of eight cases of a poorly recognized lesion. Ann Diagn Pathol 1997; 1(1): 19-25. doi: 10.1016/s1092-9134(97)80005-6



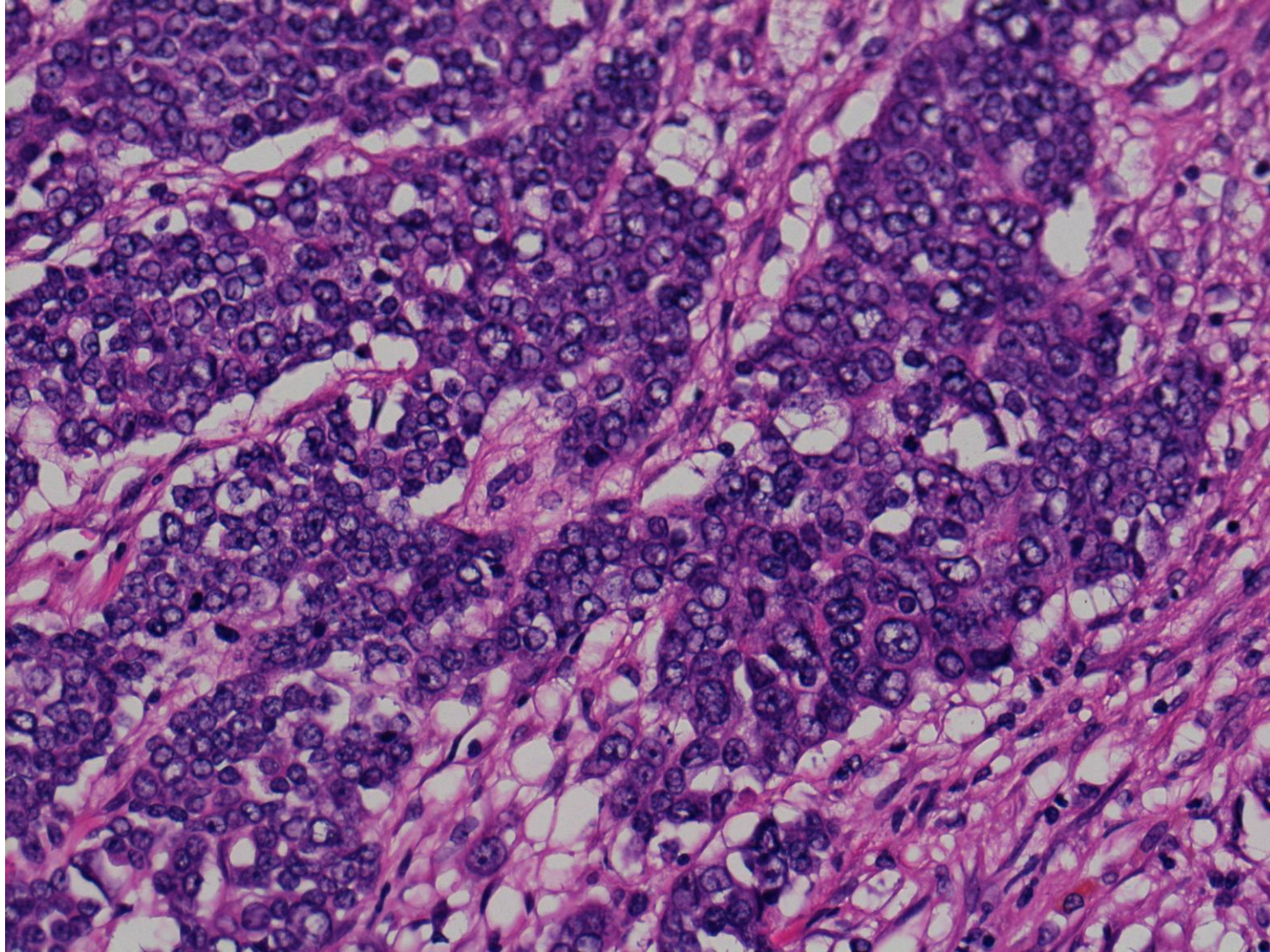
Surgical specimen of anaplastic carcinoma of the rectum of a 78 y-o female patient. Solid growth of small-sized atypical cancer cells is observed. Nuclear pleomorphism is mild (H&E-1).



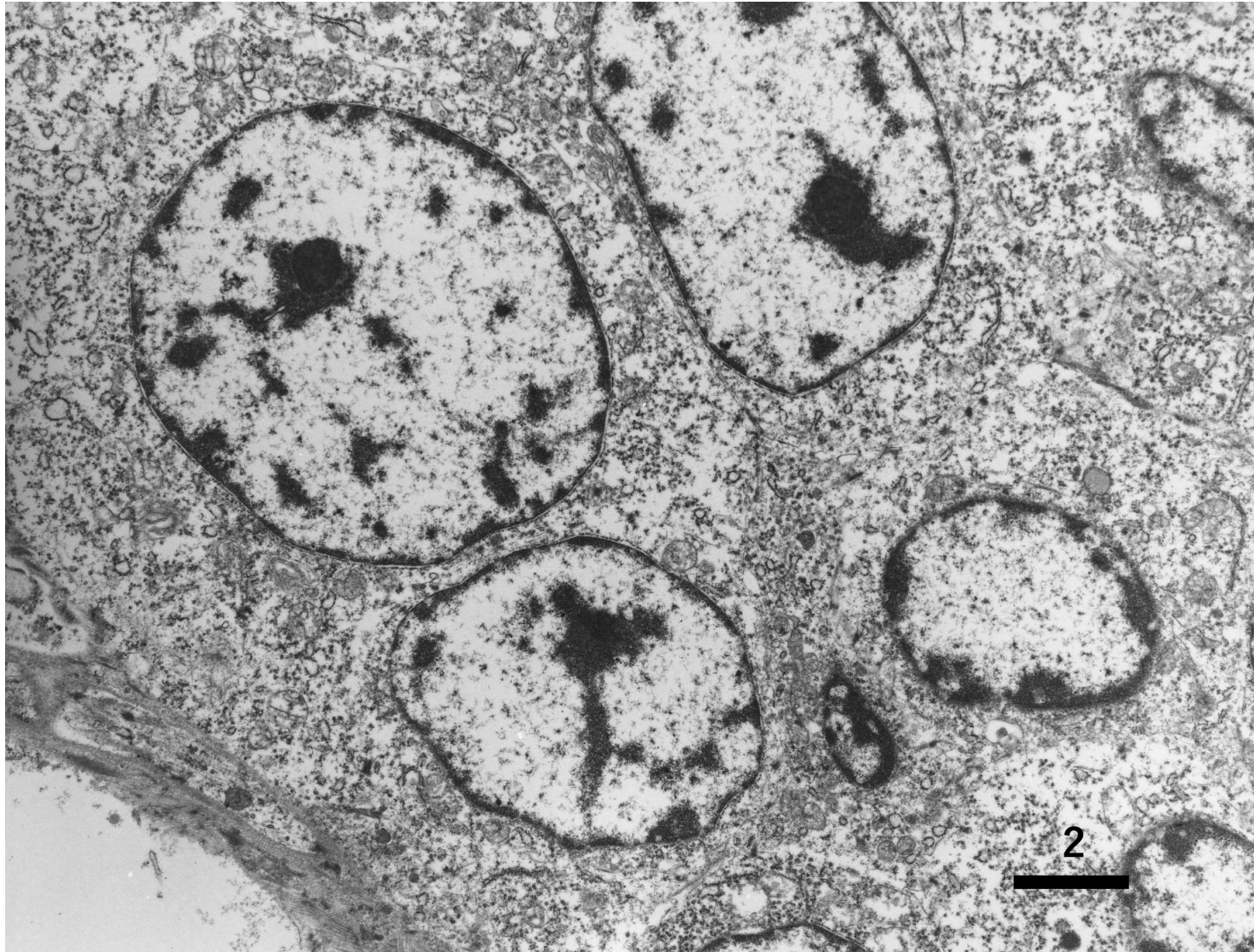
Surgical specimen of anaplastic carcinoma of the rectum of a 78 y-o female patient. Solid growth of small-sized atypical cancer cells is observed. Trabecular arrangement is also noted. Nuclear pleomorphism is mild. Lymphatic permeation is associated (H&E-2).



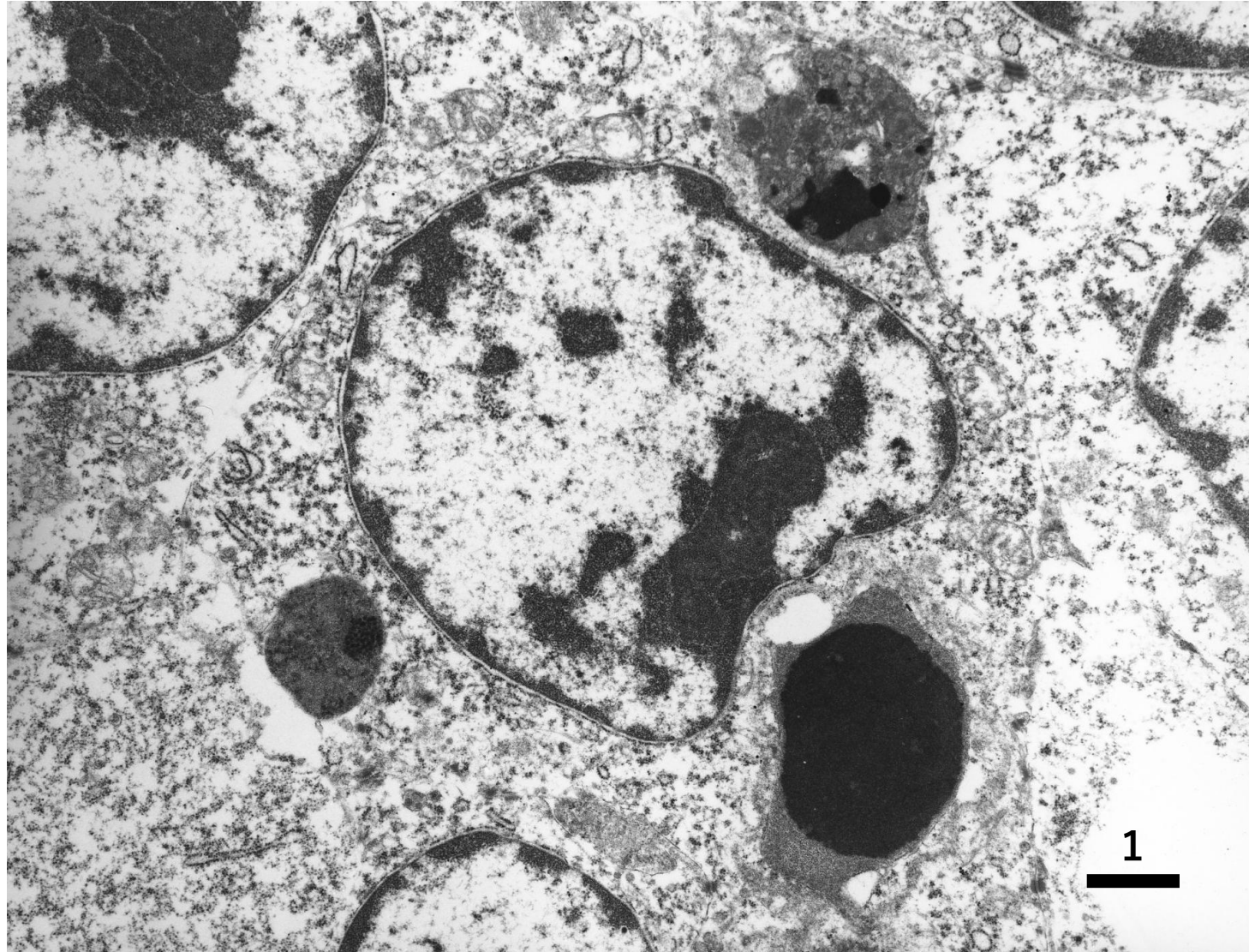
Surgical specimen of anaplastic carcinoma of the rectum of a 78 y-o female patient. Solid and trabecular growth of small-sized atypical cancer cells is observed. The N/C ratio is high, but nuclear pleomorphism is mild. Small cell neuroendocrine carcinoma is a possible diagnosis (H&E-3).



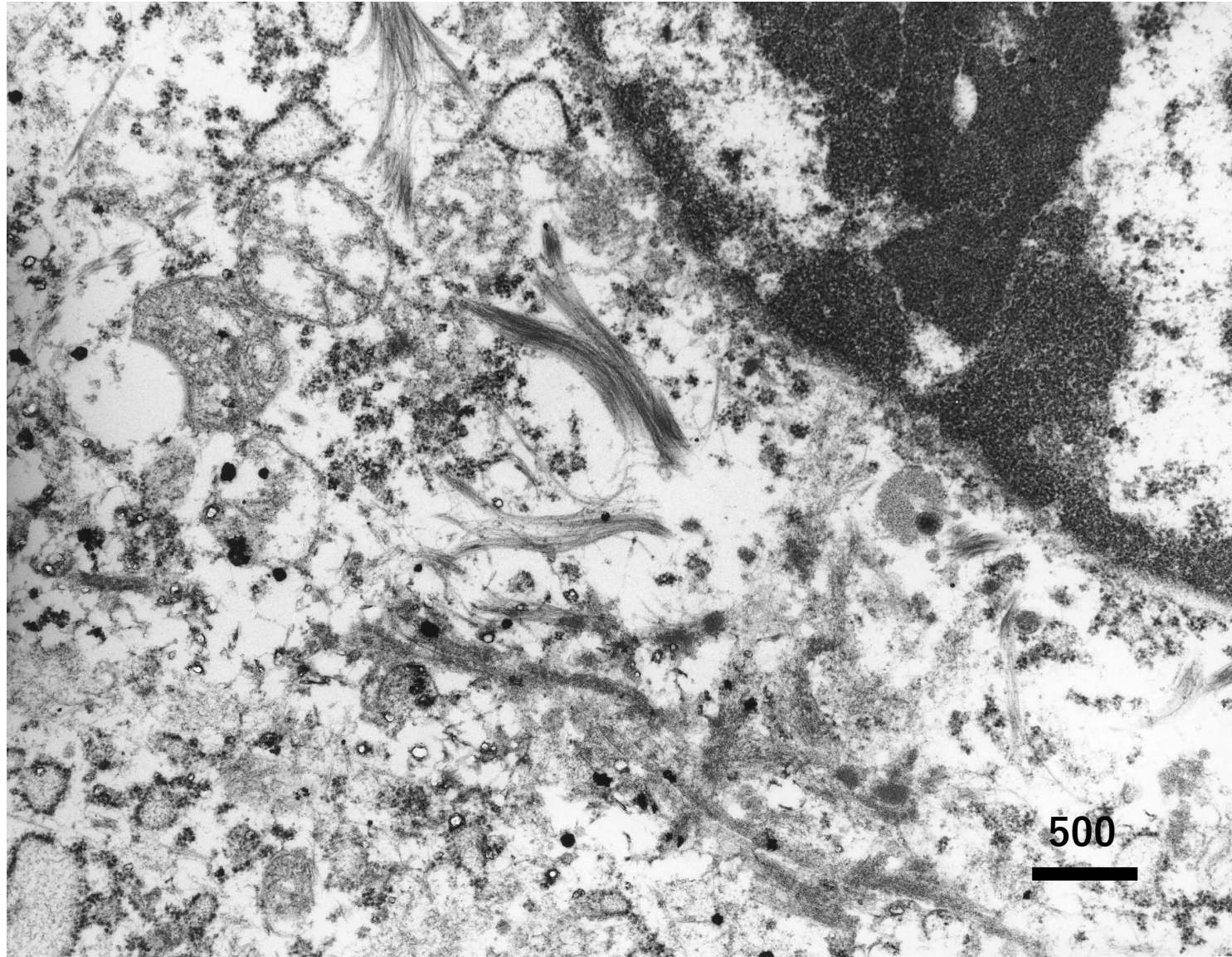
Surgical specimen of anaplastic carcinoma of the rectum of a 78 y-o female patient. Solid and trabecular growth of small-sized atypical cancer cells is observed. The N/C ratio is high, but nuclear pleomorphism is mild. Small cell neuroendocrine carcinoma is a possible diagnosis (H&E-4).



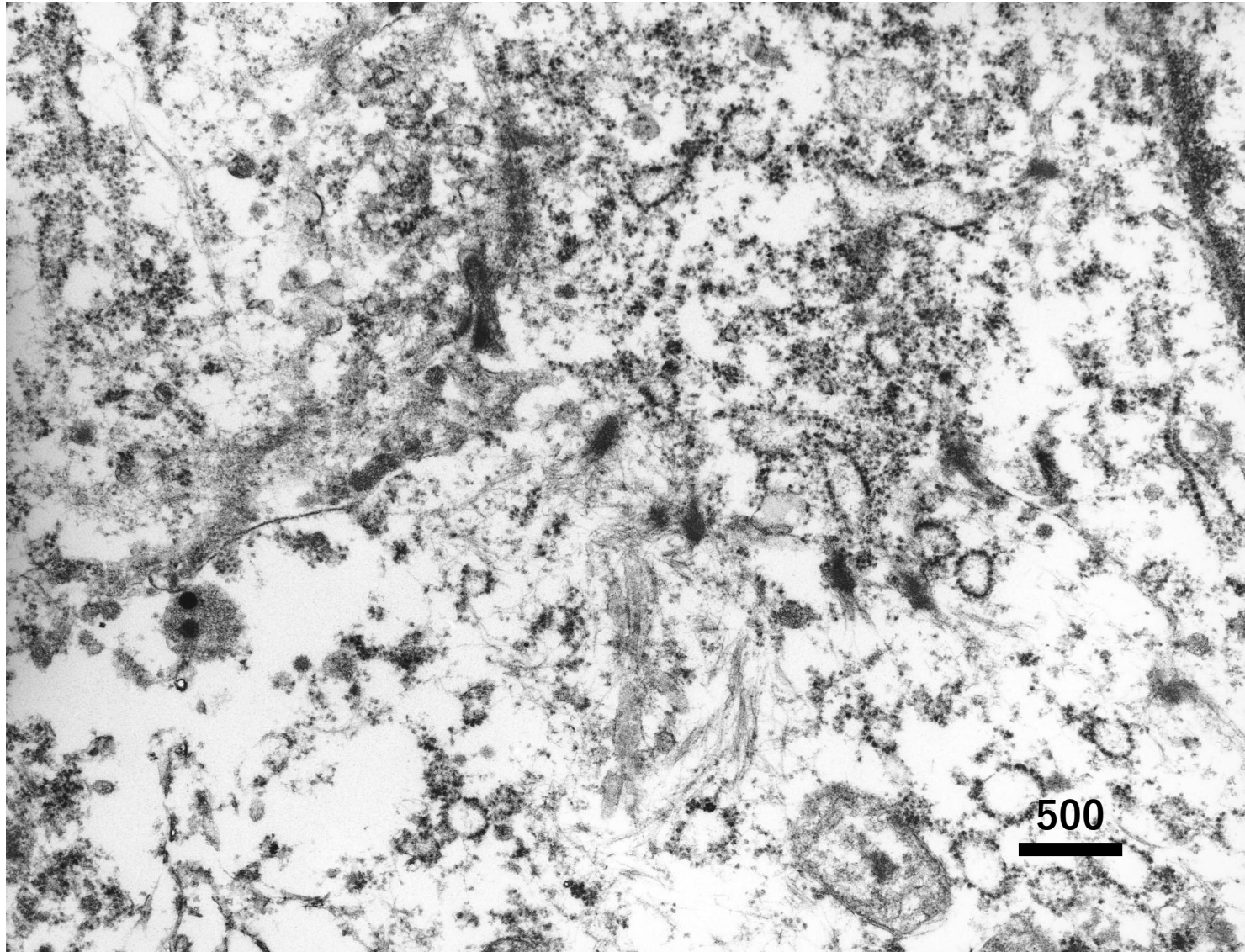
Ultrastructure of anaplastic carcinoma of the rectum of a 78 y-o female patient. Solidly growing small-sized atypical cancer cells possess round nuclei with prominent nucleoli. Organelles are poorly developed (EM-1).



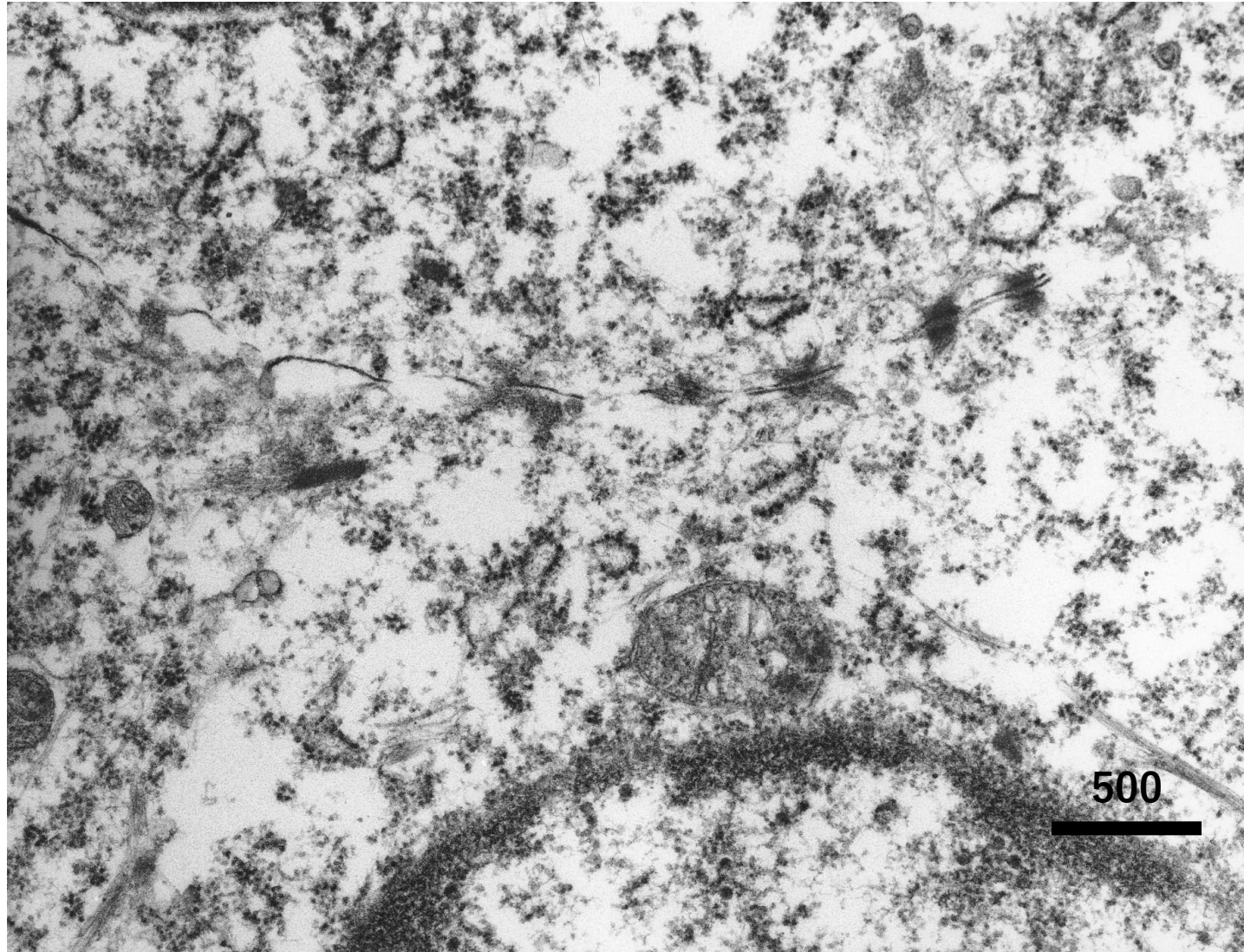
Ultrastructure of anaplastic carcinoma of the rectum of a 78 y-o female patient. The cytoplasm of the small-sized atypical cancer cell contains autophagic vacuoles, engulfing apoptotic bodies (EM-2).



Ultrastructure of anaplastic carcinoma of the rectum of a 78 y-o female patient. In the cytoplasm of the small-sized atypical cancer cell, thin bundles of intermediate filaments and glycogen particles are scattered. No neuroendocrine granules are observed (EM-3).



Ultrastructure of anaplastic carcinoma of the rectum of a 78 y-o female patient. In the cytoplasm of the small-sized atypical cancer cell, electron-dense clusters of intermediate filaments and free ribosomes are scattered. No neuroendocrine granules are observed (EM-4).



Ultrastructure of anaplastic carcinoma of the rectum of a 78 y-o female patient. The small-sized atypical cancer cells form desmosomal junctions. Rough endoplasmic reticula and free ribosomes are scattered in the cytoplasm. No neuroendocrine granules are observed (EM-5).