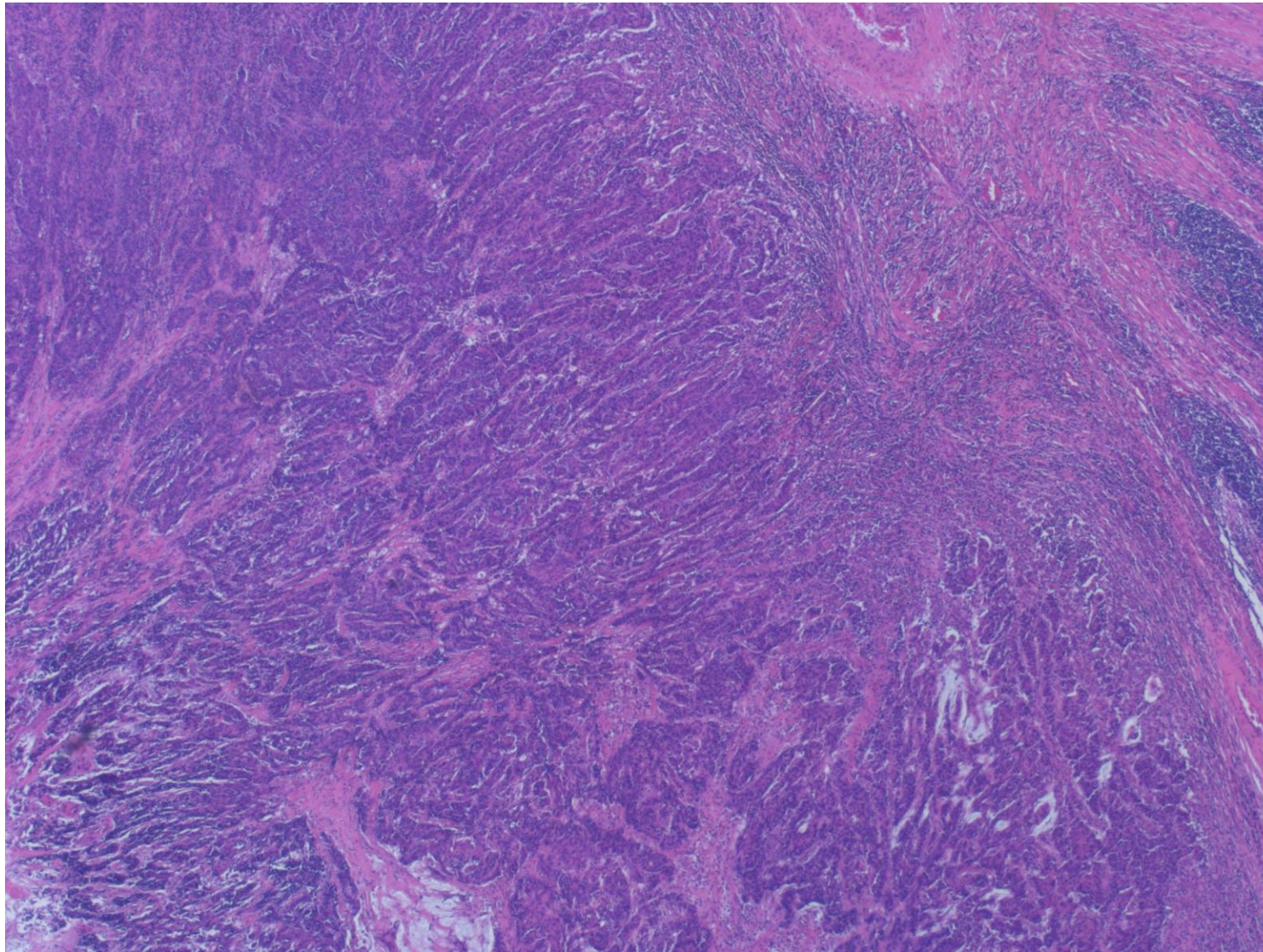


Medullary carcinoma of the ascending colon

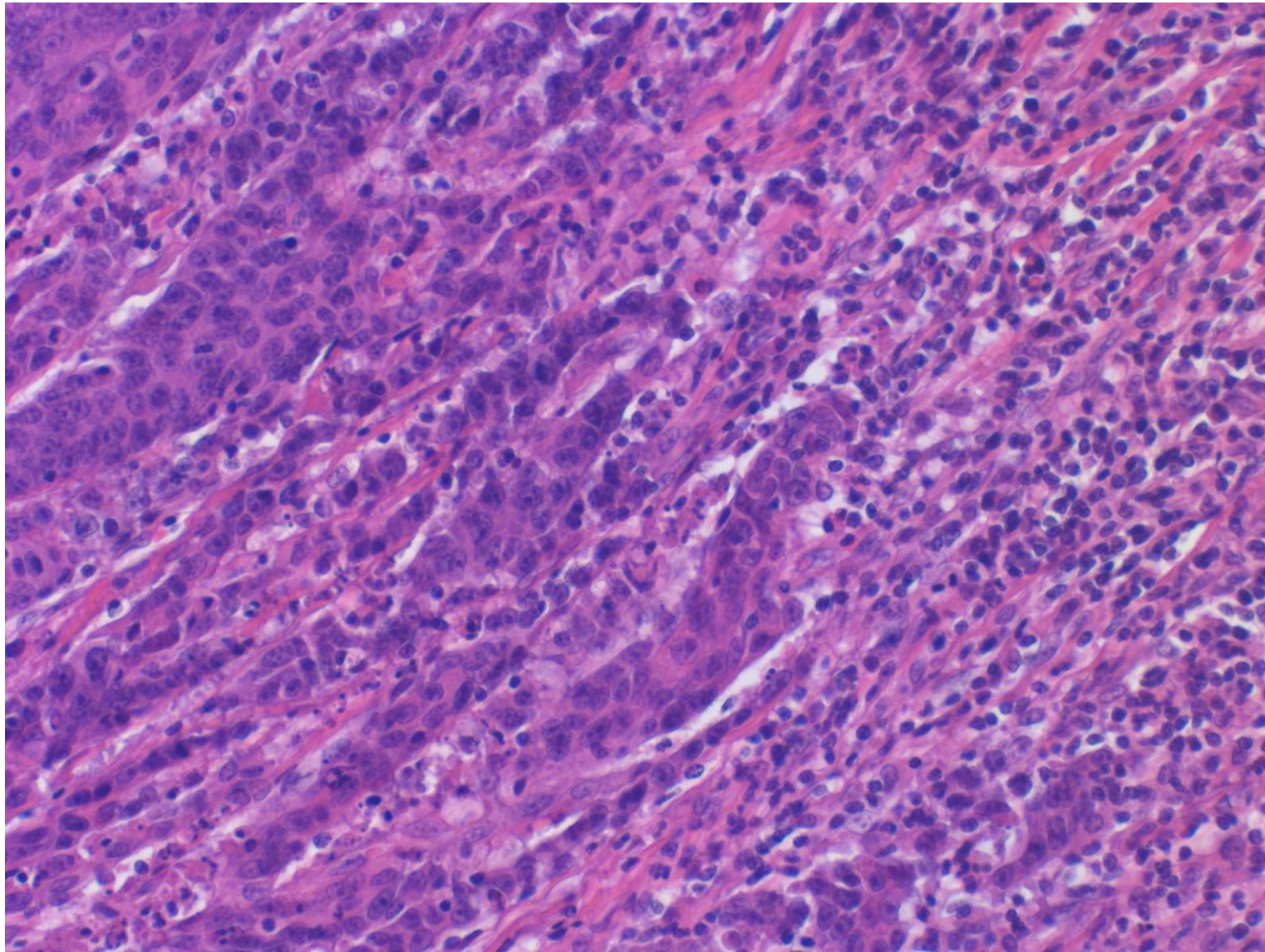
Medullary carcinoma is a subtype of colon adenocarcinoma with a solid and poorly differentiated growth pattern and pushing borders. It is common in the right-sided colon of the elderly women, as a large fleshy ulcerating mass. Lymph node metastasis is usually absent, and the prognosis is good. Microscopically, uniform cancer cells intimately associate lymphocytic stromal infiltration. Formation of glandular structures and mucin production is poor or focal. The cancer cells may express MUC5AC and calretinin. EBER is negative. Medullary carcinoma is strongly associated with a high-degree of microsatellite instability, indicative of loss of normal DNA repair gene functions. Immunostaining for MLH1 and PMS2 shows loss of their nuclear expression, while MSH2 and MSH6 are retained in the nuclei. BRAF mutation is common. The tumor may be sporadic or arise in Lynch syndrome (hereditary nonpolyposis colorectal carcinoma: HNPCC). Lynch syndrome with high risk carcinogenesis in various organs shows germline mutations in the DNA mismatch repair genes.

Ref.-1: Fatima Z, et al. Medullary carcinoma of the colon: a histopathologic challenge. Cureus 2021; 13(6): e15831. doi: 10.7759/cureus.15831

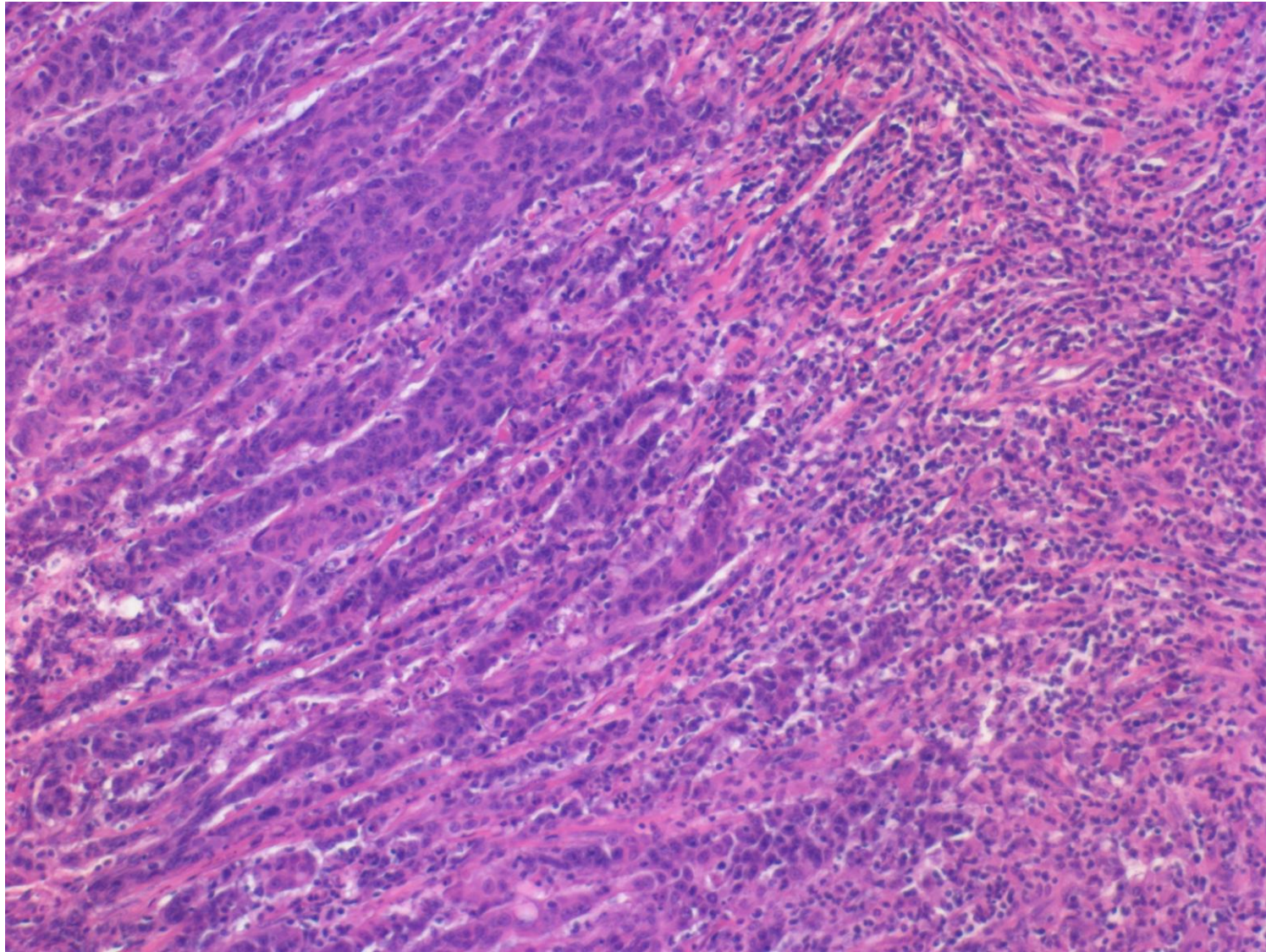
Ref.-2: Jabbal IS, et al. Medullary carcinoma of the colon: a comprehensive analysis of the National Cancer Database. Surg Oncol 2022; 45: 101856. doi: 10.1016/j.suronc.2022.101856



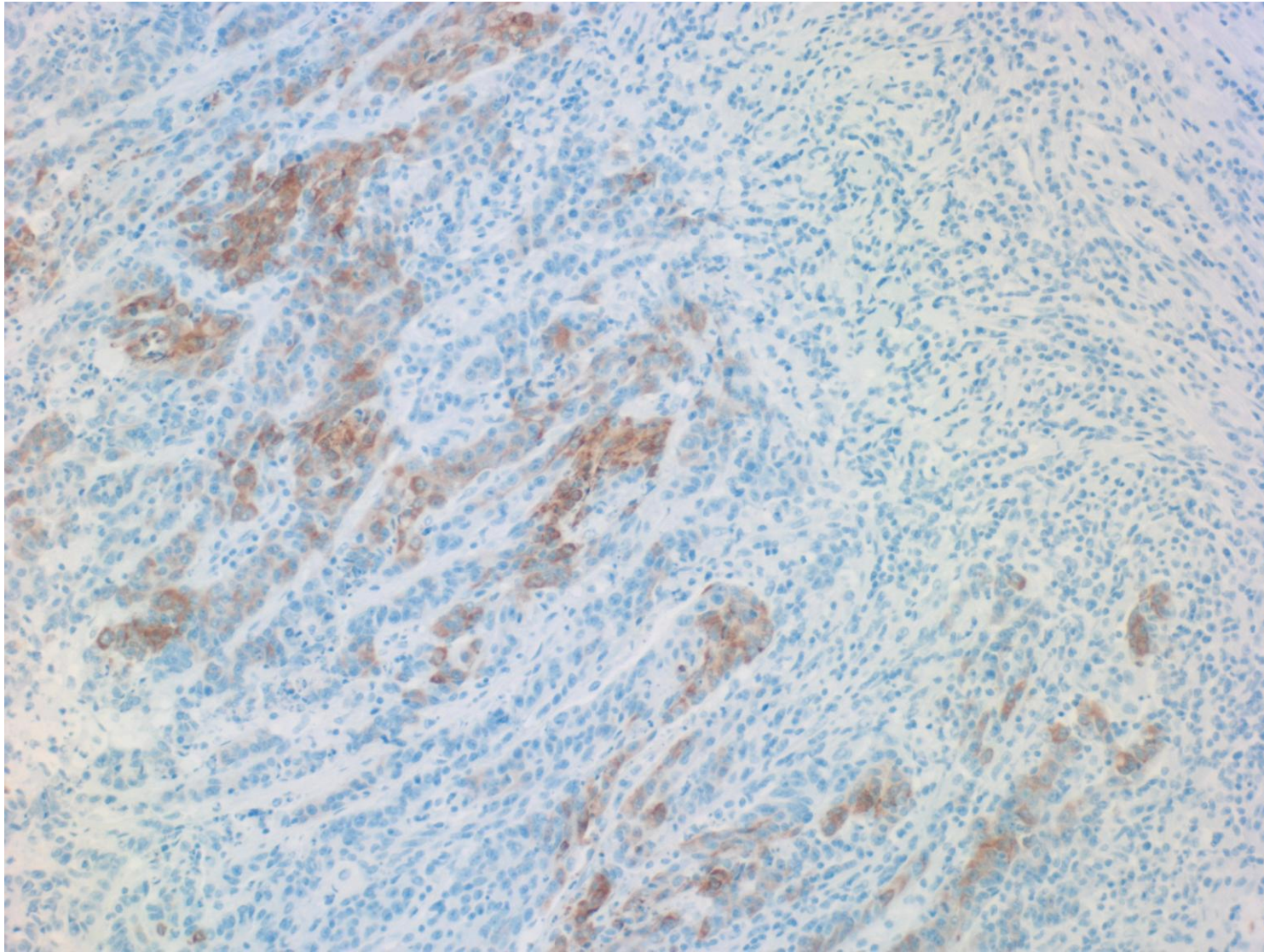
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma shows a solid/medullary and compressive growth pattern. Lymphocytic reaction is associated in the stroma. H&E-1



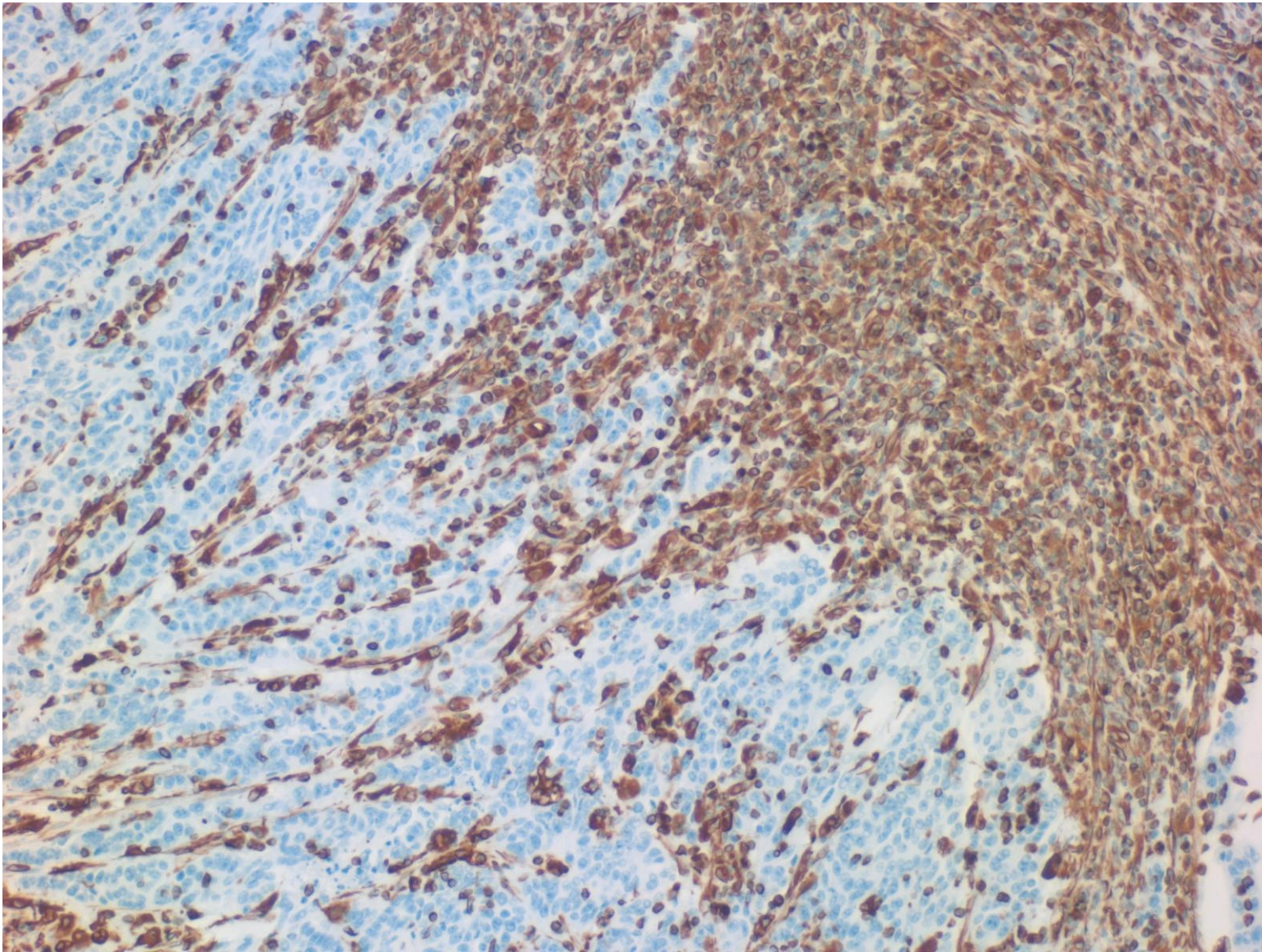
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma with a solid growth pattern shows mild nuclear pleomorphism. Lymphocytic reaction is associated in the stroma. H&E-2



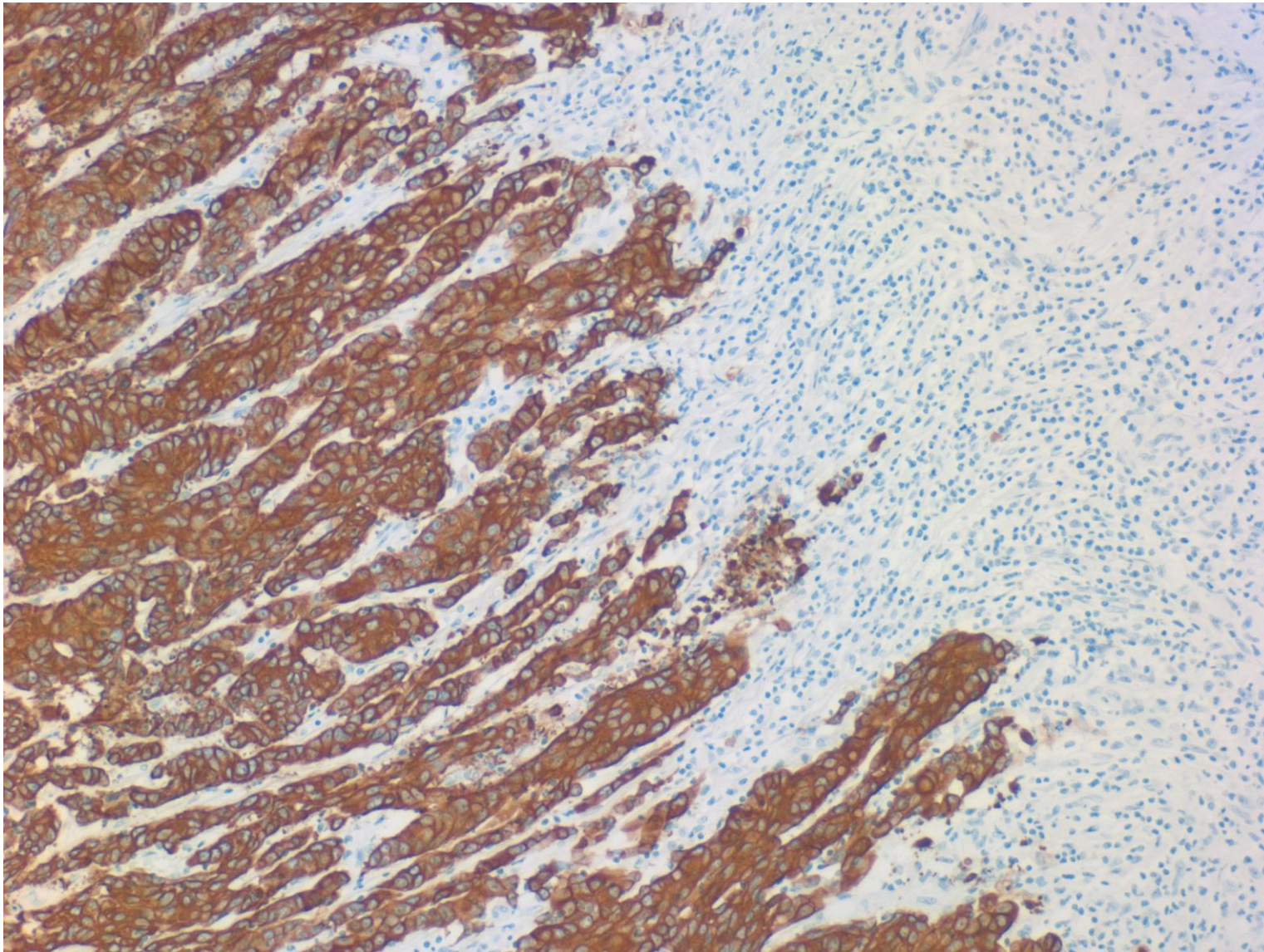
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma with a solid growth pattern shows mild nuclear pleomorphism. Lymphocytic reaction is associated in the stroma. H&E-3



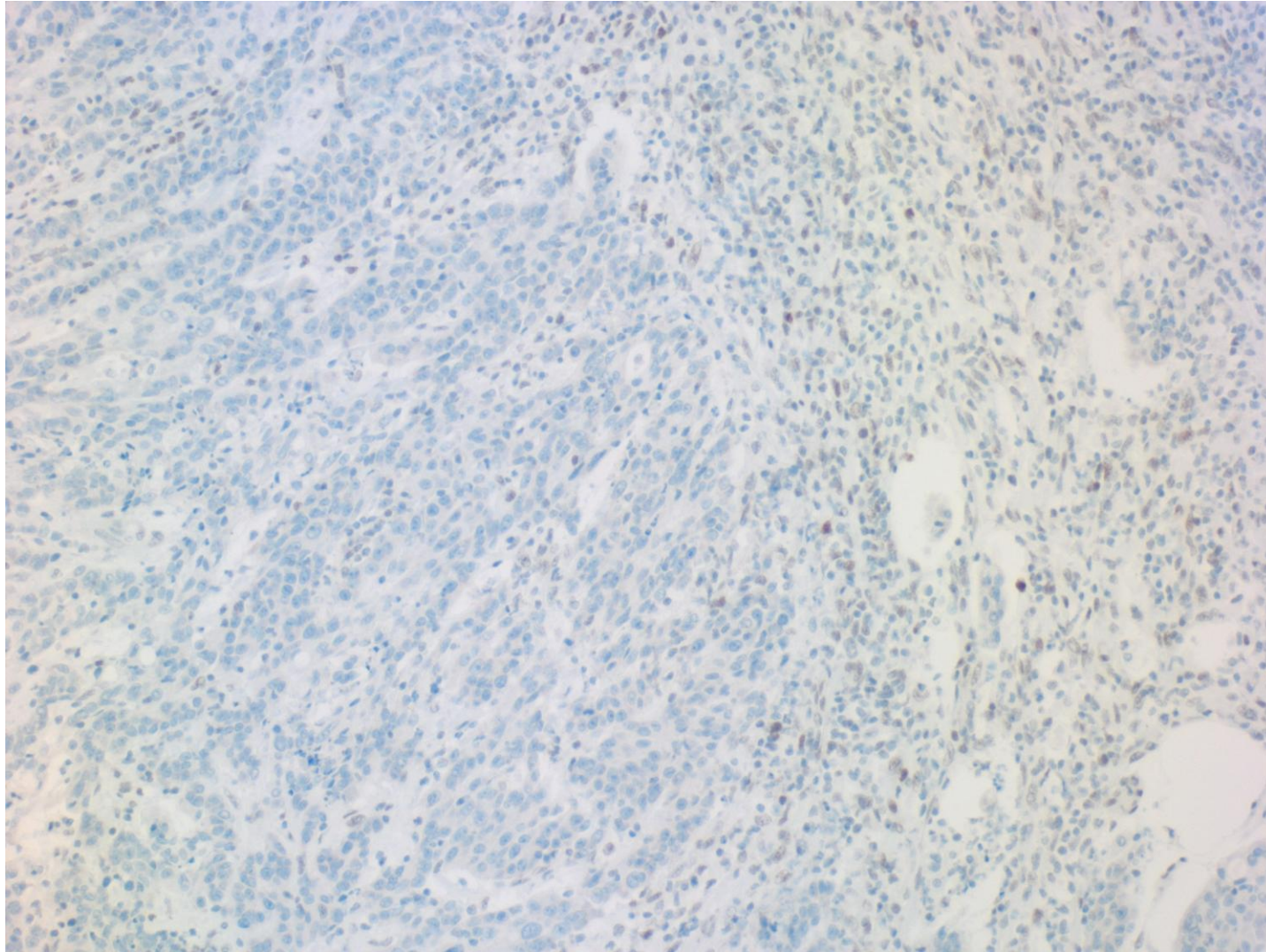
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma with a solid growth pattern express MUC5AC, indicating gastric differentiation. MUC2 and MUC6 are negative. Immunostaining for MUC5AC



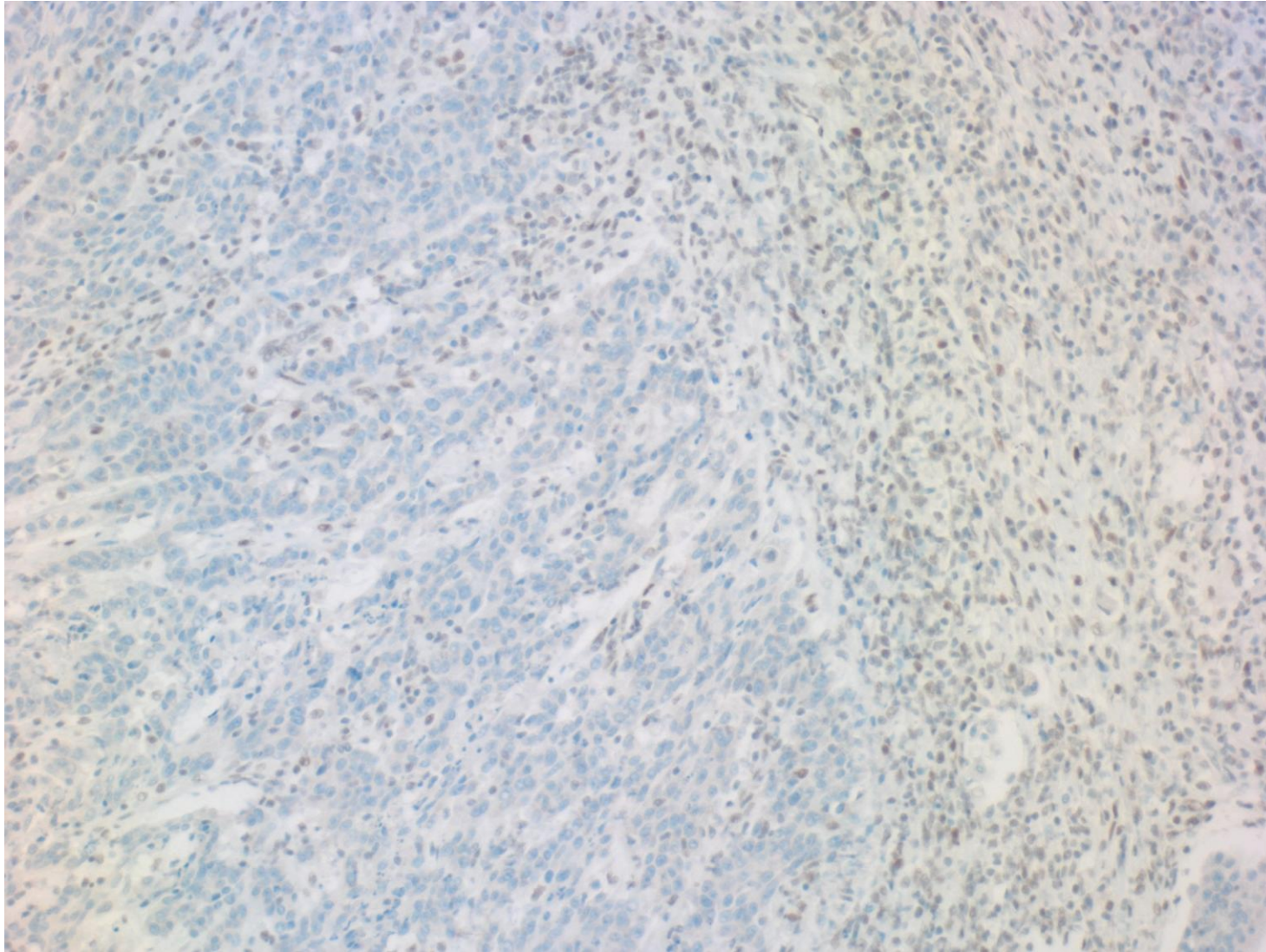
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma with a solid growth pattern is negative for vimentin. Vimentin is strongly expressed in the stromal lymphocytes. Immunostaining for vimentin



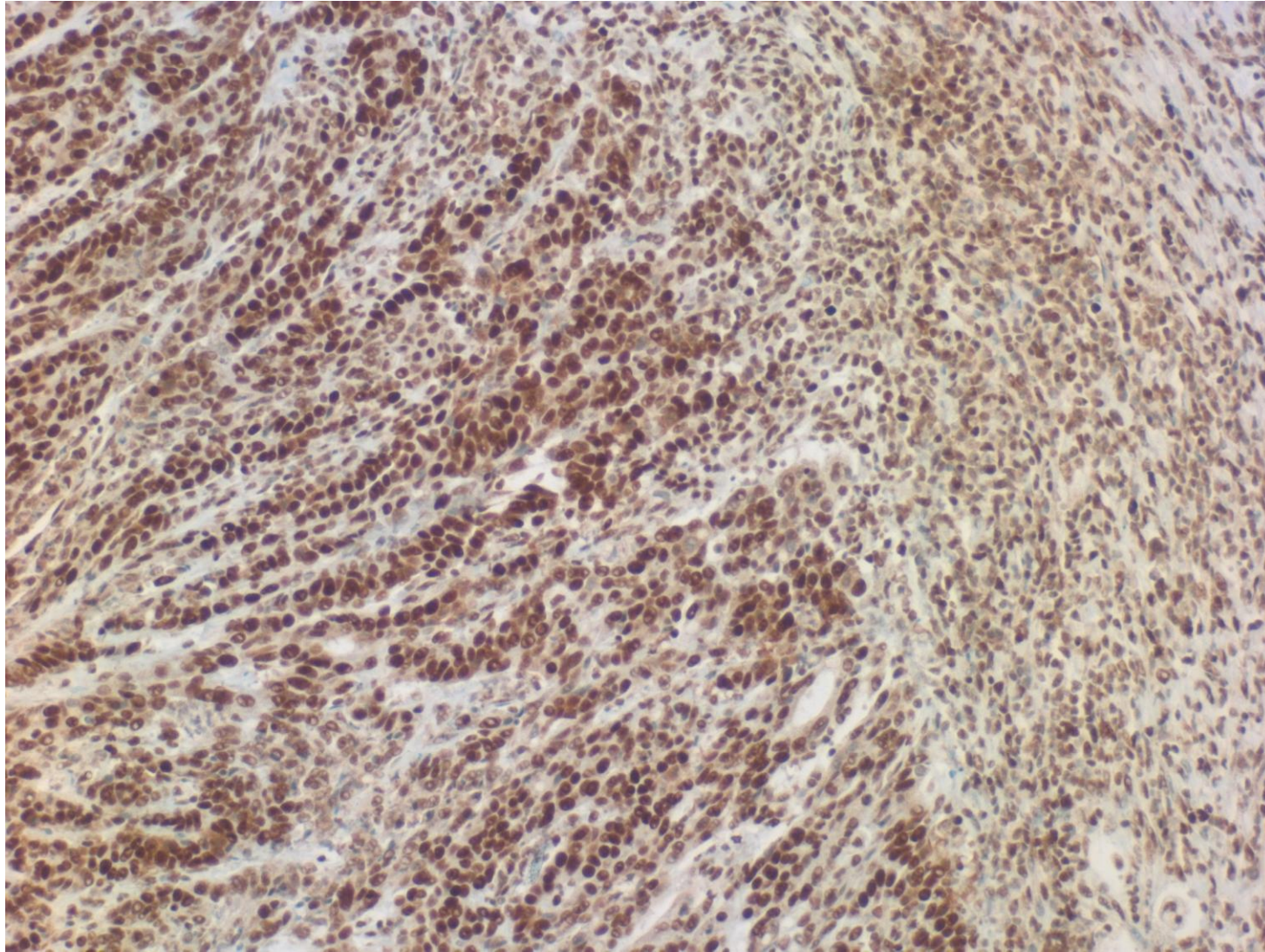
Medullary carcinoma of the ascending colon of a 64-year-old man. Poorly differentiated adenocarcinoma with a solid growth pattern is strongly positive for cytokeratins (AE1/AE3), in sharp contrast to vimentin immunostaining. Immunostaining for AE1/AE3



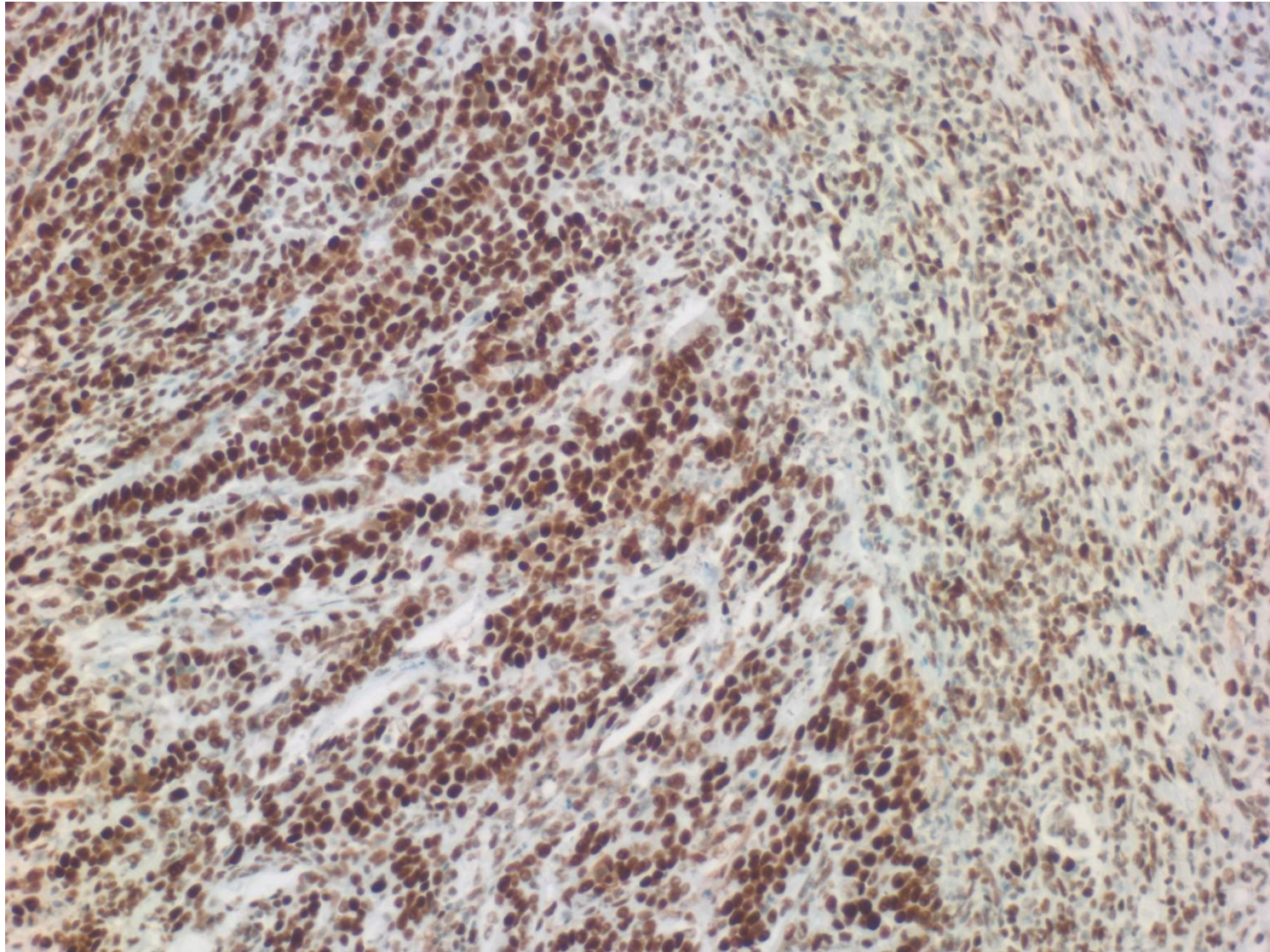
DNA repair enzyme MLH1 is negative in the nuclei of medullary carcinoma of the ascending colon, while the nuclei of lymphocytes are positive for MLH1. Immunostaining for MLH1



DNA repair enzyme PMS2 is negative in the nuclei of medullary carcinoma of the ascending colon, while the nuclei of lymphocytes are positive for PMS2. Immunostaining for PMS2



DNA repair enzyme MSH2 is normally expressed in the nuclei of both medullary carcinoma cells and stromal lymphocytes.
Immunostaining for MSH2



DNA repair enzyme MSH6 is normally expressed in the nuclei of both medullary carcinoma cells and stromal lymphocytes.
Immunostaining for MSH6