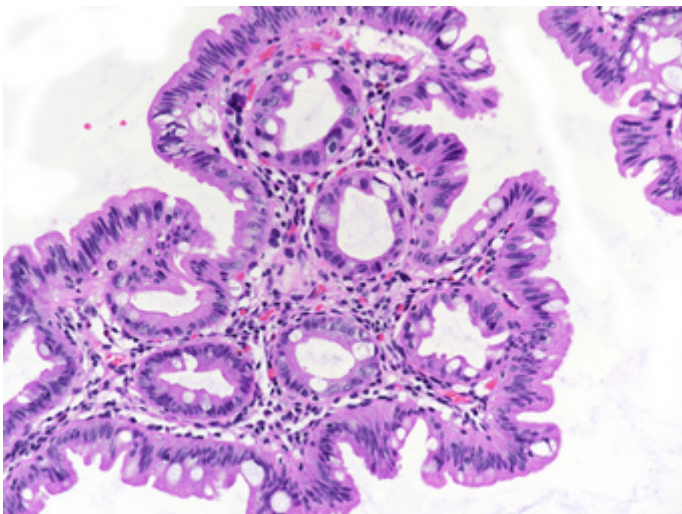
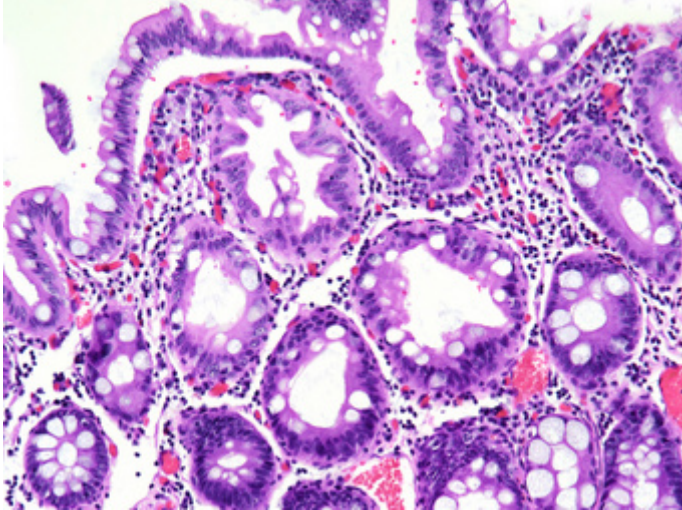
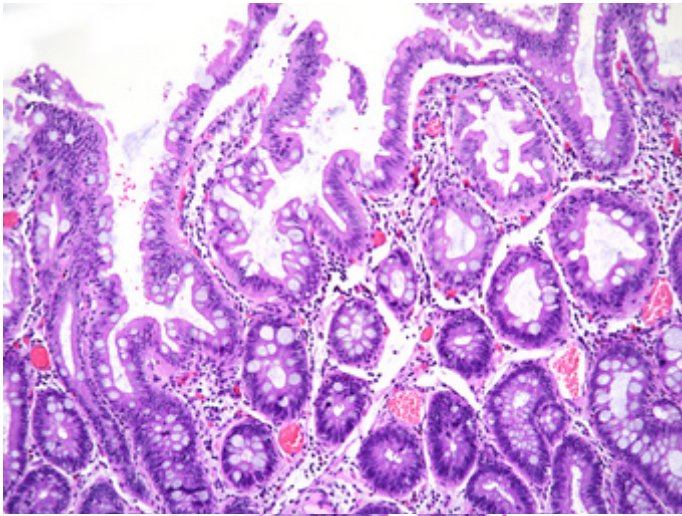
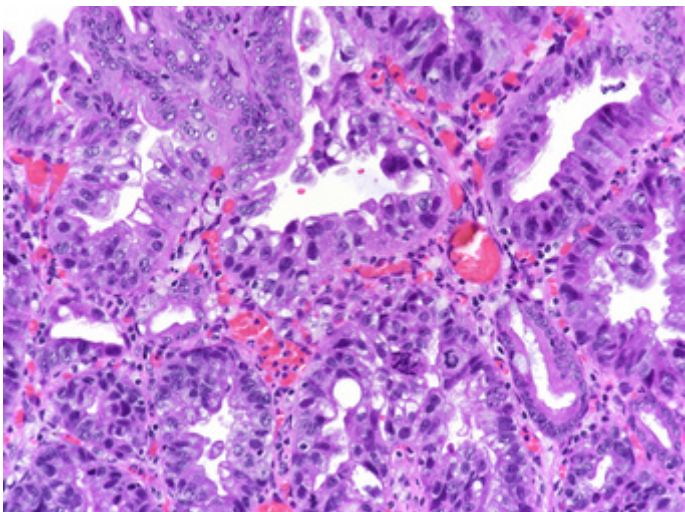
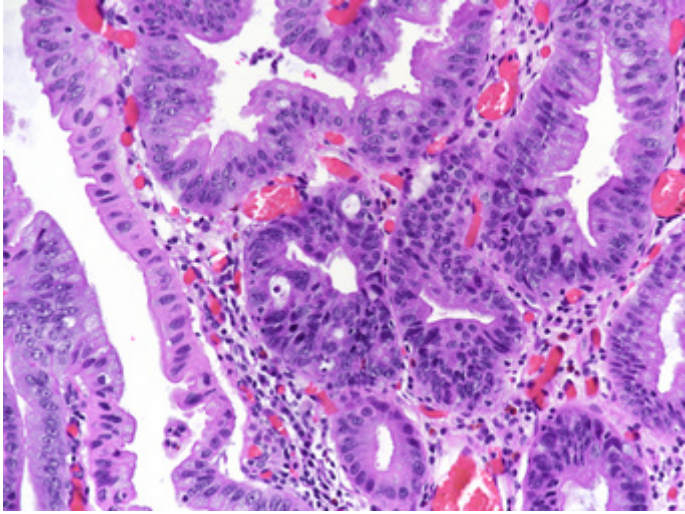
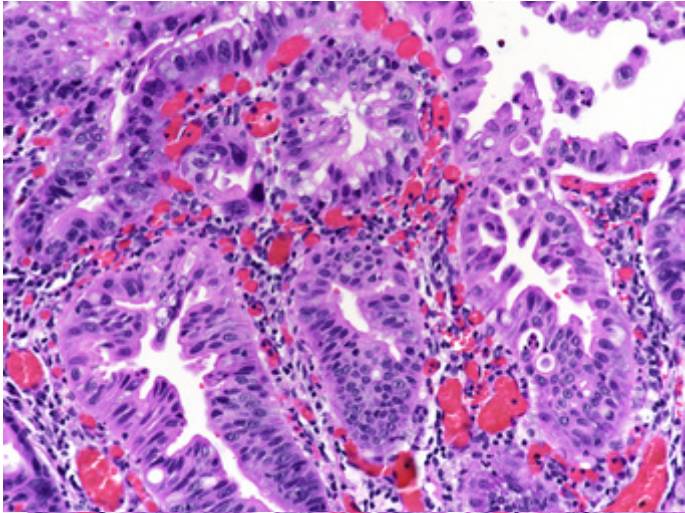
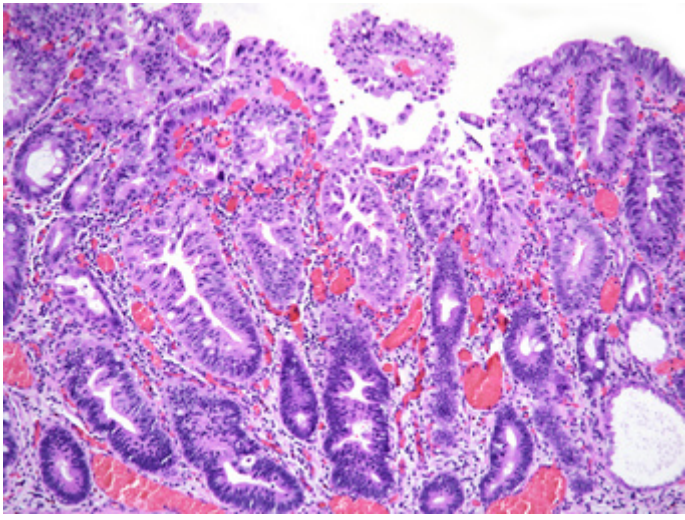


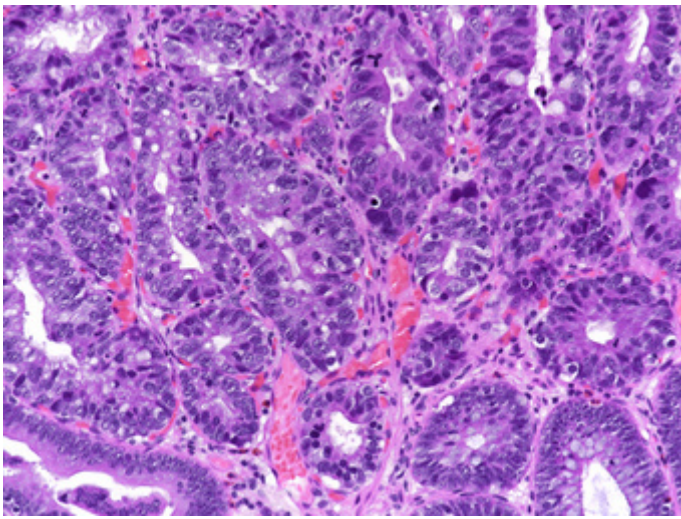
May 2021

Proctocolectomy specimen of a 60-year-old male with long standing history of ulcerative colitis.

What is your diagnosis?







Diagnosis:

High-grade inflammatory bowel disease-associated dysplasia (serrated-type NOS).

Comment:

The resection specimen shows inactive chronic colitis with typical architectural abnormalities, lacking active inflammation (quiescent disease). Within the left colon, numerous foci of non-dysplastic serrated change are present, mainly flat, but sometimes elevated (Panel A). In higher magnification, however, some nuclei disclose slight to moderate irregularities and focal hyperchromasia (Panels B and C). These foci merge with areas with unequivocal dysplastic transformation. Herein, glands are closely packed, show marked distortion, even fusion, cribriforming and solid growth, however still mostly keeping the serrated morphology (Panel D). On high magnification, marked pleomorphism with bizarre-shaped nuclei, high nuclear/cytoplasmic ratio and high mitotic activity can be seen (Panels E-G). Even atypical mitoses are present (Panel H).

Serrated change in chronic inflammatory bowel disease (IBD) has attracted growing attention only in recent years. Specifically, neoplastic foci need to be differentiated from reactive foci, which may be challenging in non-dysplastic lesions. In addition, neoplastic lesions developing from chronic inflammation (IBD-associated) should be differentiated from lesions developing independent from IBD. This, however, is difficult already in conventional dysplasia and is often impossible in serrated lesions.

Still, it is important to recognize variant forms of IBD-associated dysplasia in addition to conventional dysplasia. A recent paper by Choi et al. describes three types of IBD-associated serrated dysplasia: TSA-like, SSL-like and serrated dysplasia NOS. Our case does definitely not qualify for designation of TSA-like IBD-associated dysplasia, but some may argue, whether it could be SSL-like dysplasia, that is, sessile serrated lesion with dysplasia-like or SSLD-like (and not "NOS", which is my preferred diagnosis). The paper by Choi and co-workers is a very valuable summary of literature evidence; in addition to serrated-type dysplasia other types, such as the bizarre hypermucinous type are described in detail.

Final issue: Is this still high-grade dysplasia or already mucosal cancer? In the new WHO classification, use of the category mucosal cancer in the lower GI tract is discouraged generally. However, in the chapter on IBD-associated dysplasia (by Odze and Harpaz) the authors stress that "intramucosal carcinoma is defined by the presence of cells or glands that invade the lamina propria or into the muscularis mucosae, but not through the muscularis mucosae". Thus, if you accept the term "intramucosal carcinoma" for IBD-associated lesions, the presented case may well be included herein. Personally, I prefer to call this lesion "high-grade dysplastic".

For further reading:

- › Ko HM, Harpaz N, McBride RB, Cui M, Ye F, Zhang D, Ullman TA, Polydorides AD. Serrated colorectal polyps in inflammatory bowel disease. *Mod Pathol*. 2015; 28: 1584-93.
- › Shen J, Gibson JA, Schulte S, Khurana H, Farraye FA, Levine J, Burakoff R, Cerda S, Qazi T, Hamilton M, Srivastava A, Odze RD. Clinical, pathologic, and outcome study of hyperplastic and sessile serrated polyps in inflammatory bowel disease. *Hum Pathol*. 2015; 46: 1548-56.
- › Miller GC, Liu C, Bettington ML, Leggett B, Whitehall VLJ, Rosty C. Traditional serrated adenoma-like lesions in patients with inflammatory bowel disease. *Hum Pathol*. 2020; 97: 19-28.
- › Choi WT, Yozu M, Miller GC, Shih AR, Kumarasinghe P, Misdraji J, Harpaz N, Lauwers GY. Nonconventional dysplasia in patients with inflammatory bowel disease and colorectal carcinoma: a multicenter clinicopathologic study. *Mod Pathol*. 2020; 33: 933-943.

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