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Question: A 41 year-old woman underwent sigmoid colectomy. As occurs commonly, the specimen was received in the surgical pathology laboratory with no information other than the patient's name, medical record number, and "sigmoid." The surgeon could not be contacted. On opening the colon, a well-defined region with innumerable small polyps was identified (Figure 1). Within this region was an ulcer (arrow) and associated stricture. Proximal and distal mucosal margins were uninvolved and had normal folds.

Histological sections were taken and, at low power, the polyps were noted to be small and regularly-spaced (Figure 2). The small, regularly-spaced polyps were separated by well-defined zones of ulceration that began within the stalk and extended into the superficial submucosa (Figure 2, center). The inflammatory infiltrate within the ulcers was composed of eosinophils (Figure 2, left) with admixed neutrophils. Most polyps were composed of normal-appearing mucosa, but a few had a different appearance (Figure 2, right). What is the diagnosis and what additional information should the pathologist provide?

Answer: The keys to making this diagnosis are noticing the uniform, criss-cross nature of the linear ulcers and recognizing that the ulcer in the center of the segment is malignant. The polypoid areas represent normal mucosa that appears elevated because of the depressed linear ulcers, much as occurs in Crohn's disease. In contrast to the longitudinally-oriented ulcers that produce cobble-stone mucosa in Crohn's disease, these ulcers are oriented diagonally and right angles to one another. This reflects the mesh pattern of a stent.

Further clinical history was obtained and indicated that the patient presented with abdominal pain, changes in bowel habits, and some bright red blood per rectum. CT showed a mass in the left / sigmoid colon. Colonoscopy showed an obstructing cancer with a pinhole opening through which the scope was unable to pass and a bare-metal wire stent was placed (Figure 3) as a bridge to surgical resection.

One study of 8 patients demonstrated a similar pattern of stent-induced injury. In that series, expression of activate matrix metalloproteinase-9 (MMP-9), but not MMP-2, was increased within the stent-induced reaction exceeded that within the invasive tumors.[1] Increases in active MMP-9 have also been detected in the plasma after placement of bare-metal coronary stents,[2] suggesting that this, along with the eosinophil recruitment, represent a tissue reaction to the stent.

In addition to the diagnosis of moderately-differentiated adenocarcinoma, the pathologist provided staging information. The 5.0 cm tumor invaded into pericolonic fat (pT3) and involved 5 of 23 lymph nodes (pN2a), making it Stage IIIB. Mismatch repair protein expression was intact, but molecular testing identified a germline *APC* mutation. There was no neoadjuvant therapy, and the patient is currently receiving adjuvant chemotherapy with folinic acid, fluorouracil, and oxaliplatin (FOLFOX).

References

1. Kim EY, Song HY, Kim JC, et al. Mmp-9 expression after metallic stent placement in patients with colorectal cancer: association with in-stent restenosis. Radiology 2014; 271:901-8.
2. Jones GT, Kay IP, Chu JW, et al. Elevated plasma active matrix metalloproteinase-9 level is associated with coronary artery in-stent restenosis. Arterioscler Thromb Vasc Biol 2006; 26:e121-5.