A case of pseudotumoral malakoplakia following pathologic complete response in rectal cancer

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Dear Editor:

This letter serves to describe a rare and interesting pathologic finding following neoadjuvant chemoradiotherapy for rectal cancer followed by low anterior resection. The patient is a 74-year-old woman who presented with a 1-year history of rectal bleeding, fatigue, and anemia. Colonoscopic evaluation revealed a middle rectal mass with biopsies revealing low-grade adenocarcinoma. Staging evaluation by MRI and CT scan revealed a stage IIIC (mrT4bN2b) middle rectal cancer with no evidence of distant metastatic disease; there was concern for involvement of the cervix and vagina. The patient underwent neoadjuvant therapy with 5-FU (capecitabine) and 5040 cGy of radiation therapy. The patient underwent low anterior resection and diverting loop ileostomy 10 weeks following completion of neoadjuvant therapy. Pathology evaluation revealed a pathologic complete response (ypT0N0) with malakoplakia in the former tumor site (pseudotumoral malakoplakia).

Malakoplakia, initially described by Michaelis and Gutmann in 1902, is an uncommon granulomatous disease which usually occurs in the urinary tract. The gastrointestinal tract is the second most common site of occurrence, with the rectosigmoid and the descending colon as the most common involved sites. Although the etiology of malakoplakia has not

been fully elucidated, several mechanisms have been postulated to play a role in the pathogenesis of this process. Infection (*Escherichia coli*, *Mycobacterium tuberculosis*, *Proteus* spp., and *Staphylococcus aureus*), altered immune response, and defective lysosomal function have been implicated as possible mechanisms of malakoplakia. Previous studies have also shown the association between malakoplakia and colon cancer. It is usually an incidental finding confined to the area adjacent to the cancer, and alteration of gut flora has been postulated as the mechanism for the development of malakoplakia in colon cancer patients.

Malakoplakia usually appears as tan-yellow plaques, nodules, or extensive bands. Grossly, the differential diagnosis of gastrointestinal tract involvement includes primary or metastatic malignancy, Crohn's disease, and tuberculosis. Histologically, malakoplakia is composed of sheets of histiocytes, known as von Hanseman cells, and accumulation of basophilic periodic acid-Schiff-positive, diastase-resistant inclusions and calcified Michaelis-Gutmann bodies. By light microscopy, this pathognomonic structure appears targetoid with a dense central core. Furthermore, Michaelis-Gutmann bodies can be visualized by von Kossa stain for calcium and Prussian blue stain for iron. Microscopically, malakoplakia in the gastrointestinal tract should be distinguished from Whipple disease, tuberculosis, sarcoidosis, and other granulomatous processes.

This is the first description in the literature of malakoplakia in a case of pathologic complete response following neoadjuvant chemoradiotherapy and subsequent proctectomy. Although this may be an incidental finding, there is a possibility that histocystic infiltration may be involved in the development of a pathologic complete response due to immune-related targeting of tumor cells. Further study needs to be performed to elucidate further the pathophysiologic development of complete pathologic response for rectal cancer.

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