A Rare Finding of Colonic Malakoplakia

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Malakoplakia is a rare mucosal lesion that can be seen with gastrointestinal endoscopy. This process is classically seen in the genitourinary tract, however the gastrointestinal tract is the second most common site of occurrence. Colonic malakoplakia is largely an incidental finding, rarely causing symptoms, but it can be associated with colon adenocarcinoma making it clinically significant. We present a case of colonic malakoplakia and discuss its management and clinical significance.

INTRODUCTION

Malakoplakia is a rare chronic inflammatory disease characterized by granulomatous formation from dysfunctional bacterial clearance by neutrophils and macrophages. Originally described in 1902, these inflammatory collections are characterized by a histiocytic infiltrate with round intracytoplasmic inclusions named Michaelis-Gutmann bodies. Since first discovered, the number of reported cases of malakoplakia is less than 500 in the United States. Malakoplakia is classically associated with the genitourinary tract but is also seen in the gastrointestinal (GI) tract, the second most common site of occurrence. Malakoplakia is largely an incidental finding, however colonic malakoplakia is particularly concerning because of its close association with colon adenocarcinoma.

Case Report

A 45-year-old female Jehovah’s Witness patient with a history of living donor kidney transplant (lupus nephritis) was admitted for further evaluation of a two-month history of rectal bleeding and severe symptomatic anemia resulting in weakness, tachycardia and general malaise. She denied hematemesis, melena, abdominal pain, nausea and vomiting but did report a five kilogram (11 lb) weight loss over the previous year. Her medication list included three immunosuppression drugs for her transplant (mycophenolate, tacrolimus and prednisone). Her admission labs revealed a hemoglobin (Hb) level of 6.2 gm/dL (MCV 76 fL), which decreased to 5.1 gm/dL after fluid resuscitation, and a creatinine (Cr) of 1.7 (baseline Cr 1.3). She refused red blood cell transfusion, in keeping with her religious beliefs. During her subsequent hospitalization, her hemoglobin improved with IV iron supplementation, darbepoetin alfa and limited blood draws.

Because of continued rectal bleeding and profound anemia she underwent endoscopic evaluation. Esophagogastroduodenoscopy (EGD) revealed a normal upper gastrointestinal (GI) tract without any source of bleeding. Colonoscopy revealed a large pedunculated polyp (2-3 cm, adenoma) in the proximal transverse colon and multiple small to large polyps (1-2.5 cm)
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Staphylococcus aureus, Klebsiella spp, Mycobacterium Tuberculosis and Shigella boydii, have also been observed in malakoplakia.

Malakoplakia has also been reported in association with coliform bacteria in patients on chemotherapy and Rhodococcus equi in patients with acquired immunodeficiency syndrome.

Malakoplakia is closely associated with an impaired immune response, specifically organ transplant patients receiving immunosuppression to prevent organ rejection. Approximately 40% of malakoplakia cases that did not involve the urinary tract were associated with immunosuppression. Colonic malakoplakia has been reported in three cases with liver transplant, one case with

in the remaining colon. Additionally, the mucosa in the rectosigmoid colon appeared nodular. Internal hemorrhoids were also found and was presumed to be the source of her lower GI bleed. Routine hematoxylin and eosin (H&E) stain of the colonic biopsies revealed numerous intramucosal macrophages with some showing nuclear changes compatible with Michaelis-Gutmann bodies, consistent with malakoplakia (Figure 1, Figure 2).

She remained hemodynamically stable following endoscopy, with improvement of her hemoglobin and resolution of her acute kidney injury, and was discharged from the hospital. Empiric antibiotic therapy (levofloxacin and azithromycin) was initiated as an outpatient upon biopsy result findings. Repeat colonoscopy four months after initial evaluation revealed normal appearing ascending and transverse colon, unlike previous colonoscopy, with a small sessile descending polyp (tubular adenoma). Infectious workup was negative for rhodococcus, tropheryma whipplei, mycobacterium tuberculosis, Epstein-Barr virus, and cytomegalovirus, however she was found to have high blood levels of BK virus by PCR. It was recommended that she return for surveillance colonoscopy in 12 months.

**Discussion**

Colonic malakoplakia, first reported by Terner and Lattes in 1965, is a rare manifestation of this chronic inflammatory condition. Malakoplakia can be seen throughout the entire GI tract and gives the gross appearance of mucosal plaques or nodules that are tan to yellow. This appearance gives rise to its name as it is derived from the classic Greek work “malacos” meaning soft and “placos” meaning plaque. These lesions can cause abdominal pain, diarrhea, hemorrhage and obstruction, however they are largely asymptomatic and rarely diagnosed clinically. Diagnosis is established histologically by determining the presence of large “Hansemann macrophages” which contain the Michaelis-Gutmann inclusions.

The pathogenesis of malakoplakia is not well understood, but it has been proposed to be the result of an unusual infectious organism, an abnormal or altered immune response or an abnormal macrophage response due to defective lysosomal function. Escherichia coli has been identified as the most common bacterial pathogen, found in over 90% of affected patients, however other chronic bacterial infections, such as Proteus mirabilis,
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Acknowledgements

We would like to thank Leona Council, MD, Assistant Professor, Division of Anatomic Pathology/Department of Pathology at The University of Alabama at Birmingham and Jessica Tracht, MD for providing expert opinion and pathology microphotographs.

References


Malakoplakia is also rarely associated with colonic adenoma, as seen in our case. It is unclear if malakoplakia is a precursor to tumor or if it is an inflammatory response in conjunction with tumor. Currently there are no additional recommended guidelines for colon cancer screening or surveillance.

Treatment for malakoplakia is not fully understood, but case reports demonstrate successful treatment with ciprofloxacin and lowering immune suppression. The significance of malakoplakia, a seemingly incidental finding, is not fully understood; however it is important to monitor patients with colonic malakoplakia because of its close relationship with colon adenocarcinoma.

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