All that glitters is not gold: Gastric adenocarcinoma with medullary pattern presenting as submucosal lesion

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Gastric cancer is one of the leading causes of cancer-related deaths worldwide, with approximately 989,000 cases diagnosed and 736,600 deaths caused annually around the globe.[1] The use of endoscopic ultrasound (EUS) has proved pivotal in improved staging of gastric cancers upon diagnosis, allowing optimum treatment planning.[2] Gastric adenocarcinomas (GAC) are epithelial tumors that arise from the first layer of the gastric wall on EUS.[3] We hereby present an interesting case of GAC with atypical findings on EUS.

A 59-year-old woman with a history of stage III colon adenocarcinoma (status: After hemicolecctomy and chemotherapy) was evaluated for a 2-week history of abdominal pain. Esophagogastroduodenoscopy (EGD) revealed a 1 cm submucosal lesion at the lesser curvature of the stomach [Figure 1a]. EUS revealed a discrete, hypoechoic, and homogenous lesion which appeared to arise from the submucosa [Figure 1b]. Fine needle aspiration (FNA) was performed; however, the results were inconclusive.

The patient was lost to follow-up and presented 1 year later with melena. Repeat EGD revealed an ulcerated and friable mass at the lesser curvature [Figure 1c]. EUS showed the lesion with loss of normal wall pattern and invasion of the muscularis propria [Figure 1d]. Biopsy specimens of the mass revealed poorly differentiated GAC.

The patient underwent surgery. The final histopathology revealed not only moderately differentiated adenocarcinoma with focal glandular pattern but also extensive solid and trabecular pattern with tumor-infiltrating lymphocytes, suggestive of a neuroendocrine tumor [Figure 2]. However, immunohistochemical stains for chromogranin and synaptophysin showed only scattered positivity. Three of the 15 lymph nodes were positive, with lymph nodes showing only solid areas of tumor. Given the patient’s young age and history of primary adenocarcinomas, microsatellite instability (MSI) studies were performed on the tumor and the tumor was found to be MSI-high.

The use of EUS has proved crucial in improved locoregional staging of gastric cancers upon...
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diagnosis, allowing optimum treatment planning. A recent meta-analysis revealed that EUS has a sensitivity of 86% and a specificity of 90% when differentiating between superficial (T1-T2) and advanced (T3-T4) gastric carcinomas with a sensitivity and specificity of 83% and 67%, respectively, when evaluating for metastatic lymph node involvement. The case described above presents a unique EUS finding of a GAC arising from the submucosal layer earlier in the course. A recent meta-analysis of 20 studies revealed that EUS has a sensitivity of 87% and a specificity of 75% when differentiating between T1a (mucosal) and T1b (submucosal lesion). Given the findings above, it may be reasonable to both biopsy the overlying mucosa and perform FNA of a suspected submucosal lesion for an accurate diagnosis.

In addition, the tumor described above represents an interesting pathologic finding of medullary pattern in GAC that is characterized by a more solid growth pattern and tumor-infiltrating lymphocytes. While adenocarcinomas with a medullary pattern are well-known, to occur in MSI-high colorectal adenocarcinomas, this pattern is less well-described in GACs with limited studies showing improved prognosis in tumors with medullary pattern. Given the findings above, it may be reasonable to both biopsy the overlying mucosa and perform FNA of a suspected submucosal lesion for an accurate diagnosis.

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Conflicts of interest
There are no conflicts of interest.

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