

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

Moaz M. Choudhary, Sami Samiullah<sup>1</sup>, Hadi Bhurgri<sup>1</sup>, Mark A. Galan<sup>2</sup>, Sushil Ahlawat<sup>1</sup>

Departments of Internal Medicine, <sup>1</sup>Gastroenterology and Hepatology and <sup>2</sup>Pathology, Rutgers New Jersey Medical School, Newark, New Jersey, USA

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.<sup>[1]</sup> The use of endoscopic ultrasound (EUS) has proved pivotal in improved staging of gastric cancers upon diagnosis, allowing optimum treatment planning.<sup>[2]</sup> Gastric adenocarcinomas (GAC) are epithelial tumors that arise from the first layer of the gastric wall on EUS.<sup>[3]</sup> 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 hemicolectomy 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

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

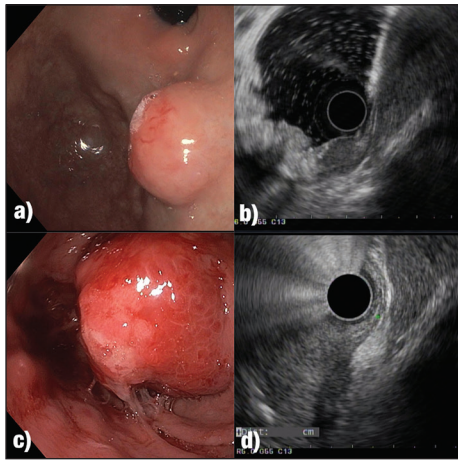
**How to cite this article:** Choudhary MM, Samiullah S, Bhurgri H, Galan MA, Ahlawat S. All that glitters is not gold: Gastric adenocarcinoma with medullary pattern presenting as submucosal lesion. *Endosc Ultrasound* 2017;6:67-8.

Access this article online	
<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.eusjournal.com">www.eusjournal.com</a>
	<b>DOI:</b> 10.4103/2303-9027.200209

## Address for correspondence

Dr. Moaz M. Choudhary, Department of Internal Medicine, Rutgers New Jersey Medical School, 150 Bergen Street, UH-I-248, Newark - 07103, New Jersey, USA. E-mail: choudhary.moaz@gmail.com

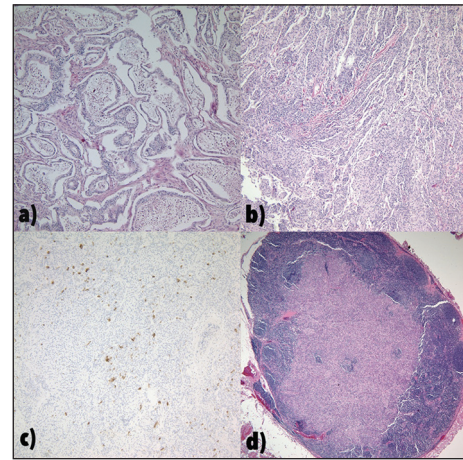
Received: 2015-06-18; Accepted: 2015-10-13



**Figure 1.** (a) Submucosal lesion on initial EGD (b) Discrete hypoechoic and homogeneous lesion that appears to be arising from the submucosa on initial EUS (c) Follow-up EGD showing friable mass at the same location (d) Follow-up EUS showing gastric mass with loss of normal wall pattern and invasion of the *muscularis propria*

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.<sup>[4]</sup> 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).<sup>[4]</sup> 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



**Figure 2.** (a) A photomicrograph of the carcinoma showing glandular differentiation (4×) (b) A photomicrograph of the carcinoma showing more solid areas (4×), suggestive of a medullary pattern. Tumor-infiltrating lymphocytes are present as well (c) An immunohistochemical stain for synaptophysin shows only scattered positivity in the more solid areas (4×) (d) Metastases were present in three out of 15 lymph nodes (4×). The metastatic tumor showed a solid architecture as well

GACs with limited studies showing improved prognosis in tumors with medullary pattern.<sup>[5]</sup>

#### *Financial support and sponsorship*

Nil.

#### *Conflicts of interest*

There are no conflicts of interest.

#### REFERENCES

1. Jemal A, Bray F, Center MM, *et al.* Global cancer statistics. *CA Cancer J Clin* 2011;61:69-90.
2. Ganpathi IS, So JB, Ho KY. Endoscopic ultrasonography for gastric cancer: Does it influence treatment? *Surg Endosc* 2006;20:559-62.
3. Nagler AK, Aslanian HR, Siddiqui UD. Endoscopic ultrasound and gastric lesions. *J Clin Gastroenterol* 2011;45:215-21.
4. Karve S, Lorenzo M, Liepa AM, *et al.* Treatment patterns, costs, and survival among medicare-ENrolled elderly patients diagnosed with advanced stage gastric cancer: Analysis of a linked population-based cancer registry and administrative claims database. *J Gastric Cancer* 2015;15:87-104.
5. Lu BJ, Lai M, Cheng L, *et al.* Gastric medullary carcinoma, a distinct entity associated with microsatellite instability-H, prominent intraepithelial lymphocytes and improved prognosis. *Histopathology* 2004;45:485-92.