

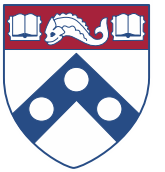
Use of EUS to Characterize a Rare Gastric Tumor with *EWSR1-CREM* Fusion

MariaLisa Itzoe, DO, MPH, Isabella Tondi-Resta, MD, Ronald DeMatteo, MD, Robert Maki, MD, PhD, Danielle Fortuna, MD

Immanuel K. Ho, MD, FACP

Division of Gastroenterology, Pennsylvania Hospital

University of Pennsylvania, Philadelphia, PA, USA



INTRODUCTION

- A new entity of intra-abdominal epithelioid neoplasms contain features of mesothelioma with angiomatoid fibrous histiocytoma (AFH) and express a unique *EWSR1/FUS-CREB* gene fusion.
- Gastric primary lesions have been under-represented in this tumor entity and our case is only the second to be described.
- EUS is an effective and important imaging modality to characterize and obtain biopsies that allow for diagnosis.

CASE REPORT

A 47-year-old male with PMH of asthma, GERD, IBS, and anxiety presented with six months of epigastric discomfort worsened by eating.

Physical exam: soft, non-distended abdomen with diffuse left-sided tenderness.

Laboratory data was unremarkable. Abdominal US showed complex septated mass antero-superior to the spleen.

Shortly after, the patient developed new radiation of his abdominal pain to the left chest and shoulder for which he was admitted to the hospital for work-up. Abdominal CT demonstrated that the exophytic lesion was extending from lateral wall of gastric fundus and irritating the phrenic nerve below the diaphragm causing referred pain. EUS characterized the lesion as multi-cystic and originating from muscularis propria.

The patient underwent partial gastrectomy with symptomatic improvement. Serial CT scans and multidisciplinary follow-up are planned to monitor for tumor recurrence.

IMAGING & HISTOLOGY



Figure 1. Septated mass on US



Figure 2. Exophytic lesion on CT



Figure 3. On EUS: heterogenous multicystic lesion, 7.6cm x 5.3cm. Largest cyst measuring 2.4cm x 1.9cm (arrow).

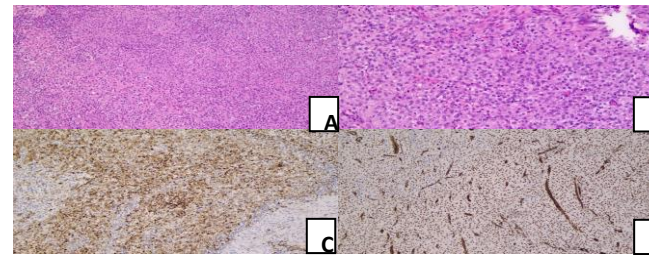


Figure 4. A: lesional epithelioid cells (10x); B: lesional epithelial cells with clear to eosinophilic cytoplasm (20x); C: lesional epithelial cells staining positive with PanCK (10x); D: lesional cells showing nuclear staining with WT1 (10x)

EUS cytology: tumor cells stained + SMA, + Pancytokeratin, + WT1

Biopsy: sheets of epithelioid cells with vesicular nuclei and clear to eosinophilic cytoplasm without necrosis

Pathology: epithelioid tumor involving the gastric wall and serosa, displaying mesothelial and AFH features by immunohistochemistry and morphology

FISH showed an *EWSR1* translocation and RNA fusion panel confirmed an *EWSR1-CREM* fusion

DISCUSSION

Authors have referred to a new tumor entity as “malignant epithelioid neoplasms with predilection of mesothelial-lined cavities.”^(1,2) Although precise classification is unclear, these tumors harbor *EWSR1* or *FUS* genes, involved in various neoplastic processes, with a *CREB/CREM* partner, a transcription factor for cell survival.

This report described a male with persistent abdominal pain found to have one such tumor that was characterized on EUS prior to surgical excision.

While the majority of such newly reported tumors have occurred intra-abdominally, our case appears to be only the second found in the stomach.⁽¹⁾

SUMMARY

- Neoplasms with *EWSR1-CREM/CREB* fusions should be included in the differential for gastric masses.
- EUS plays an important role in characterizing and distinguishing this malignancy from other intramural gastric tumors.

REFERENCES

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