The Esophagus and Beyond: A Case of Refractory Chest Pain

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INTRODUCTION

Esophageal disorders are a common etiology for noncardiac chest pain, including esophagogastric junction outlet obstruction(EGJOO). Herein, we describe a case of a patient with EGJOO with refractory chest pain who was ultimately found to have Hereditary alpha-tryptasemia(HaT). This rare presentation allows clinicians to broaden the differential when investigating noncardiac chest pain.

REFERENCES

1. Lyons JJ, et al. Elevated basal serum tryptase identifies a multisystem disorder associated with increased TPSAB1 copy number. Nat Genet. 2016;48(12):1564-1569.
2. Hamilton MJ, Zhao M, Giannetti MP, et al. Distinct Small Intestine Mast Cell Histologic Changes in Patients With Hereditary Alpha-tryptasemia and Mast Cell Activation Syndrome. Am J Surg Pathol. 2021.
3. Konnikova L, Robinson TO, Owings AH, et al. Small intestinal immunopathology and GI-associated antibody formation in hereditary alpha-tryptasemia. J Allergy Clin Immunol. 2021.
4. Luskin KT, White AA, Lyons JJ. The Genetic Basis and Clinical Impact of Hereditary Alpha-Tryptasemia. J Allergy Clin Immunol Pract. 2021.
5. Mira M Wouters et al. Gut 2016;65:155-168
6. Jimenez-Rodriguez T et al. J Asthma Allergy 2018;11:121-142 Akin C. J Allergy Clin Immunol 2017;140:349-55

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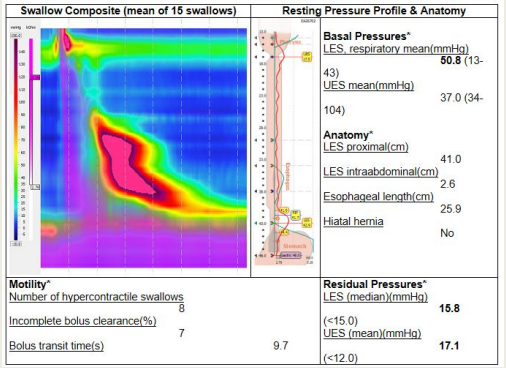
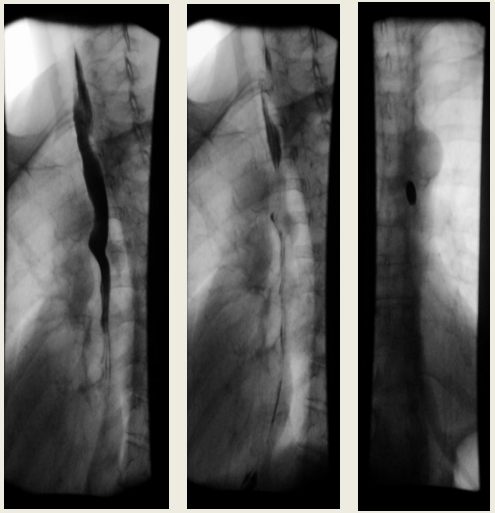
CASE DESCRIPTION

- 80-year old female with >20yrs of unresolved chest pain
- Previously treated for reflux and functional chest pain
- Testing revealed EGJOO and hypercontractile peristalsis
- Despite treatment with various **endoscopic** (botulinum toxin, celiac plexus block and peroral endoscopic myotomy) and **medical therapies** (nitrates, calcium channel blockers, antispasmodics, neuromodulators, PPIs, H2 blockers, viscous lidocaine, cannabinoids, gut-directed hypnosis, cognitive behavioral therapy) her symptoms progressed to frequent and severe chest pain with nausea and abdominal pain now triggered by exercise
- With a history of 48 allergies, a tryptase level was found to be elevated [tryptase 21.4 ng/ml (nl < 10.9)].
- Genetic testing revealed two copies of the TPSAB1 gene and negative KIT mutation.
- These findings, with her clinical syndrome, met diagnostic criteria for HaT. Her symptoms improved with cromolyn but she could not tolerate antihistamines.

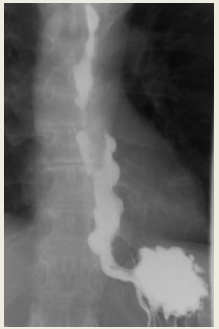


High Resolution Manometry
- >90% of swallows had a DCI > 8000



Barium Esophagram (TOP)
- Decreased primary peristalsis and tertiary contractions
- Intraesophageal reflux to the level of the cervical esophagus
- Transient delay of passage of barium tablet at the GE junction

Barium Esophagram (RIGHT)
- Decreased primary peristalsis with tertiary contractions and retrograde movement of contrast up to the mid esophagus.
- Intermittent mild-moderate esophageal spasm.



DISCUSSION

- HaT is an autosomal dominant disorder with elevated tryptase levels due to an **increased copy number in the TPSAB1 gene**
- It is found in up to 6% of individuals with European ancestry.
- The clinical presentation varies from asymptomatic to idiopathic anaphylaxis or dysautonomia
- GI manifestations of HaT are still unclear due to the under recognition of this disorder and overlap with mast cell activation syndrome.
- Increased **duodenal mast cells** have been described in patients with HaT and symptoms of abdominal pain, diarrhea, constipation and nausea
- Mast cell disorders, including HaT should be considered in patients with **multiple allergies and symptoms refractory to usual therapies**.
- Further studies are needed to elucidate the role of HaT in GI motility.