

Successful treatment of achalasia with endoscopic ultrasound guided botulinum injection in setting of esophageal varices

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INTRODUCTION

Achalasia in the setting of esophageal varices prompts difficult decisions in management given potential complications from liver disease and increased risk of variceal bleeding from stagnant food causing esophageal inflammation. Considering treatment options like pneumatic dilation, botulinum toxin injection, peroral endoscopic myotomy, or heller myotomy presents a challenging dilemma. We describe a case of achalasia treated with endoscopic ultrasound (EUS) guided botulinum toxin injection in a patient with esophageal varices.

CASE PRESENTATION

- **Patient:** A 69-year-old man with cirrhosis secondary to non-alcoholic steatohepatitis complicated by esophageal varices, portal hypertensive gastropathy, and portal vein thrombosis presented with dysphagia and malnourishment
- **Varices:** Grade 2 large middle and lower esophageal varices were found during esophagogastroduodenoscopy (EGD). (Figure 1)
- **Achalasia:** Esophageal manometry showed type 2 achalasia. (Figure 2)
- **Treatments:** Given his varices and 30 day post operative mortality risk of 34%, surgical management such as Heller myotomy was excluded. Co-existing achalasia with dysphagia made it more challenging to treat the esophageal varices in 3 separate EGD's.
- **EUS-guided Botulinum toxin Injection:** After multidisciplinary discussion, it was decided to proceed with an EUS-guided Botulinum toxin (Botox) injection for the treatment of achalasia. (Figure 3)
- **Varices** were subsequently ligated.
- **Follow-up:** the patient was able to eat and drink normally

OBJECTIVE

FIGURE 1



Figure 1. Endoscopic view of middle third of the esophagus which showed large esophageal varices. A Schatzki ring was also found at GE junction and dilated with a through-the-scope balloon to 18mm that led to partial improvement.

FIGURE 2

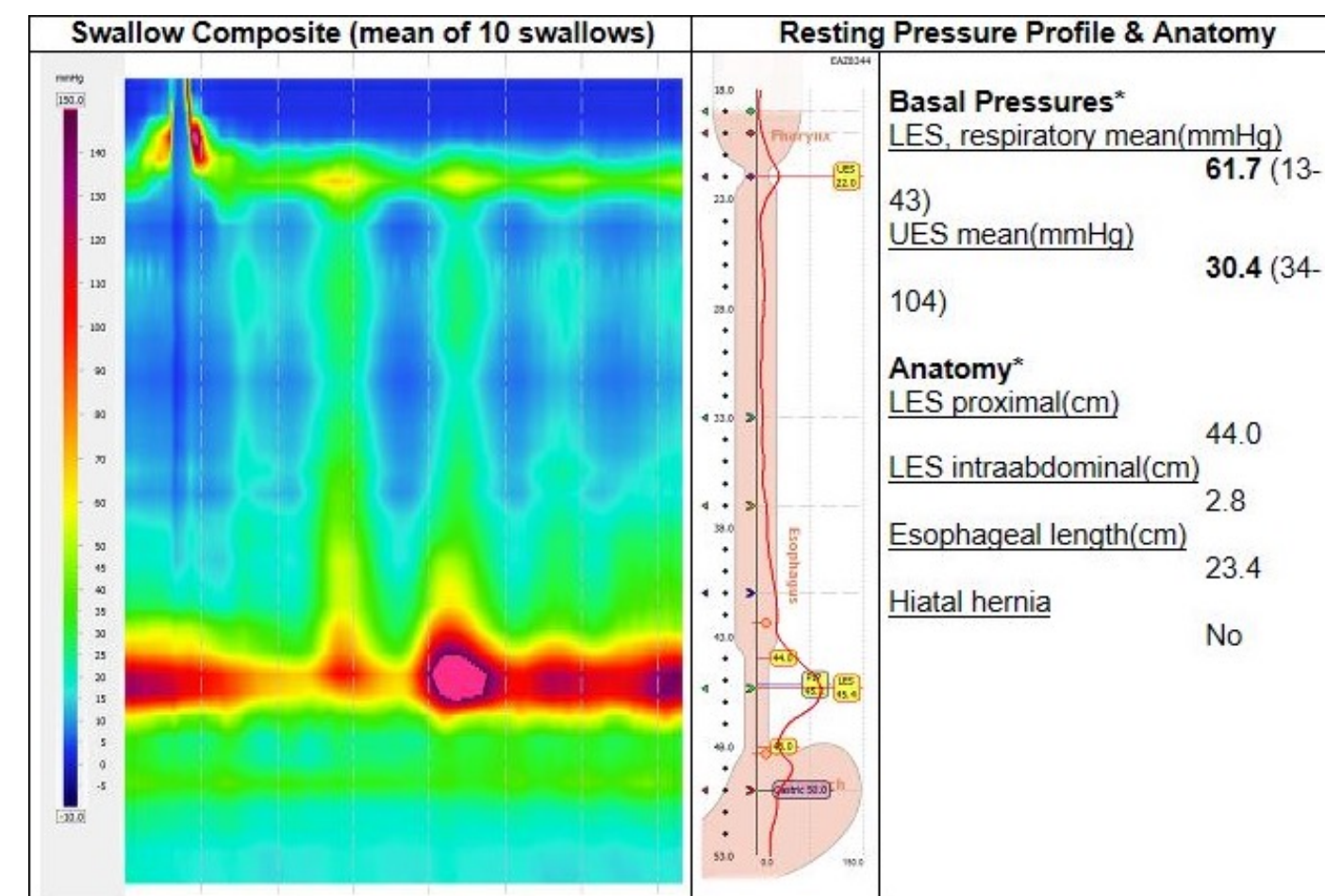


Figure 2. Esophageal manometry showed pan-pressurization consistent with type 2 achalasia.

FIGURE 3

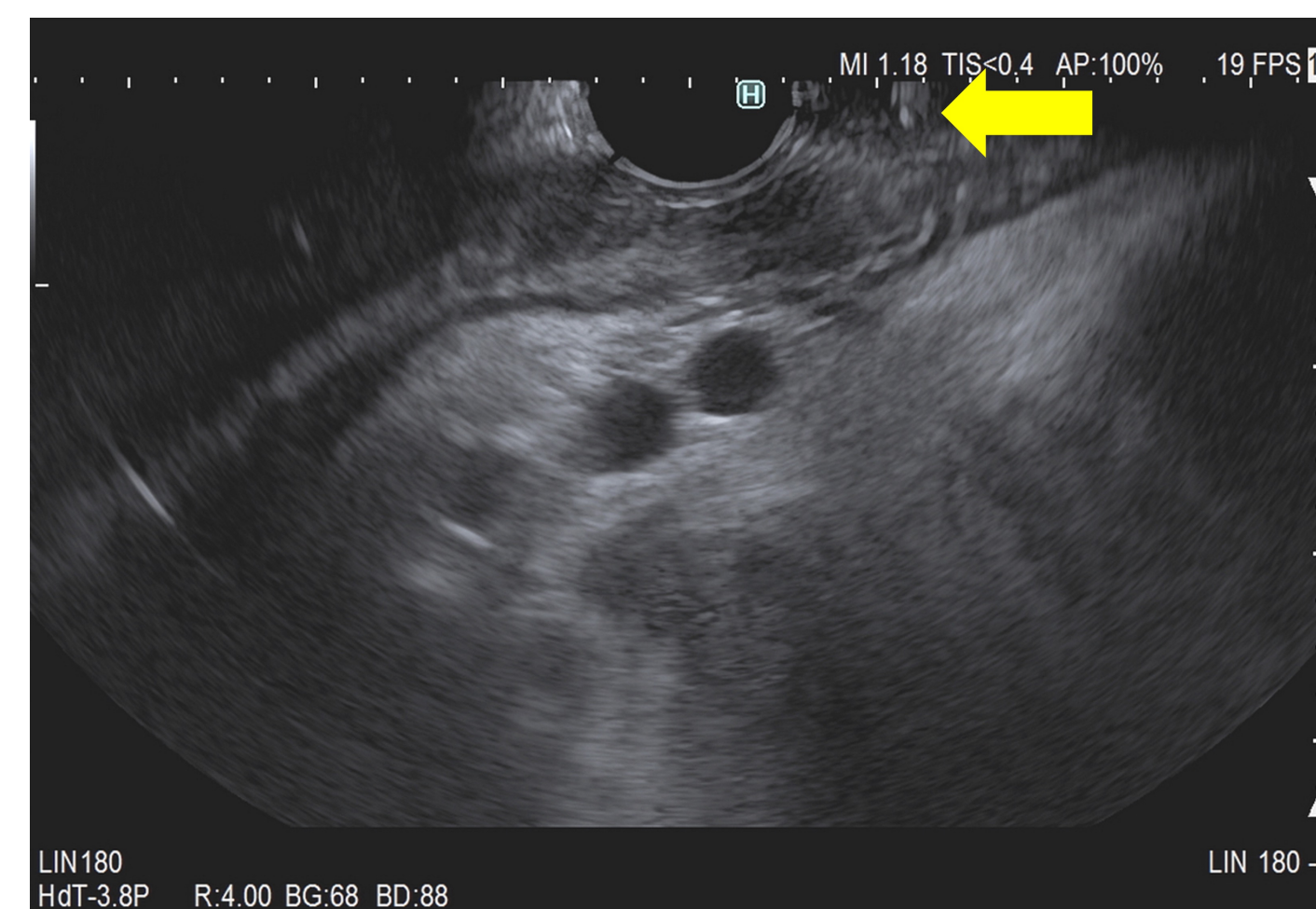


Figure 3. Endoscopic Ultrasound visualization of botulinum toxin injection into the muscularis propria (MP) of the lower esophageal sphincter (LES), which was identified by EUS to guide an endoscopic needle into this layer for injection of 100 units of Botox while avoiding intervening vessels and varices. Arrow identifies needle tip.

DISCUSSION

- In patients with liver cirrhosis, achalasia worsens nutritional status which could prevent candidacy for transplant.
- Botox injections can temporarily counteract the loss of inhibitory neuron function in achalasia by inhibiting acetylcholine release in the excitatory neurons that stimulate the LES.
- This provides an important window to improve nutritional status and likelihood of transplant candidacy.
- EUS allows identification of the MP and identifies an endoscopic needle trajectory that will not course through any potential vessels, such as varices as demonstrated in this case.

CONCLUSIONS

- EUS-guided Botox injection to avoid varices followed by variceal ligation is potentially a safer method for delivering botulinum toxin to the LES.

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