To the Duodenum, and Beyond! Using the BougieCap for Duodenal Stricture Dilation

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INTRODUCTION

- Benign duodenal strictures are typically caused by peptic ulcer disease, caustic ingestion, surgical anastomoses, or inflammatory bowel disease[1]
- Treatment of benign strictures usually involves endoscopic dilation using through-the-scope (TTS) balloon dilators with or without fluoroscopy[2,3]
- TTS balloon dilators allow visualization during dilation, but they do not provide haptic feedback
- The BougieCap dilator (OVESCO Endoscopy AG, Tuebingen, Germany) is a newer device that attaches to the endoscope and allows direct visual and haptic feedback during dilation
- While the BougieCap is generally used for dilation of esophageal strictures[4,5], here we describes its use for dilation of a benign duodenal stricture

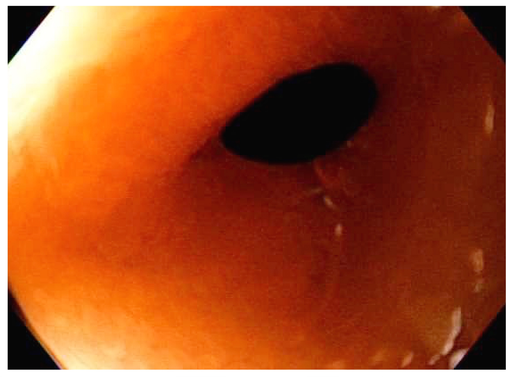

Figure 1. Endoscopic view of a duodenal stricture prior to dilation

CASE PRESENTATION

- 75-year-old male with stage IV non-small cell lung cancer on immunotherapy was found to have biliary dilation on imaging
- He subsequently underwent endoscopic ultrasound which incidentally revealed a duodenal stricture at the junction of the first and second portions of the duodenum (**Figure 1**)
- The stricture was unable to be traversed with the linear echoendoscope or an adult upper endoscope
- TTS balloon dilation from 8 to 12 mm was performed, however, the adult upper endoscope was still unable to traverse the stricture.
- Biopsies of the stricture were obtained and were negative for malignancy and gastric biopsies did not reveal any evidence of Helicobacter pylori infection
- Approximately 4 months later, the patient developed progressive nausea and vomiting. Upper endoscopy again showed the duodenal stricture which was unable to be traversed
- The decision was made to use the BougieCap device for dilation
- The stricture was then sequentially dilated from 10 to 12 mm using the BougieCap with direct visualization of mucosal disruption during dilation as expected (**Figures 2-4**)
- The adult upper endoscope was then able to traverse the stricture easily
- There were no procedural complications or adverse effects and the patient reported improvement in his symptoms

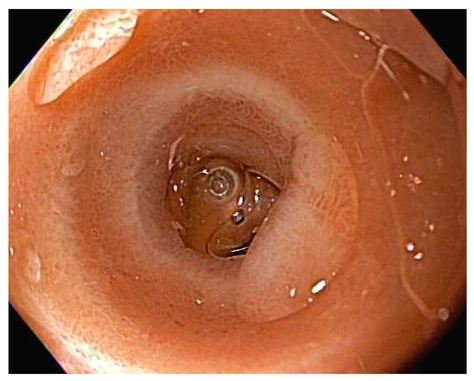

Figure 2. The BougieCap device is attached to the endoscope and carefully advanced to dilate the stricture under direct visual and haptic control

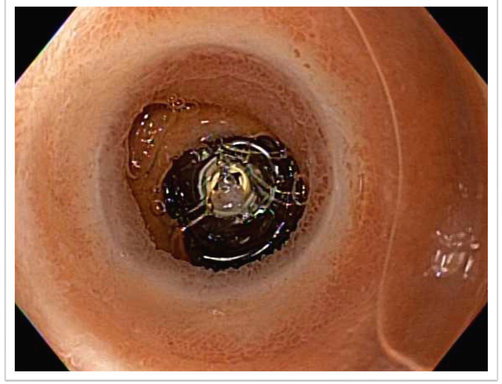

Figure 3. Sequential dilation of the stricture from 10 to 12 mm is performed

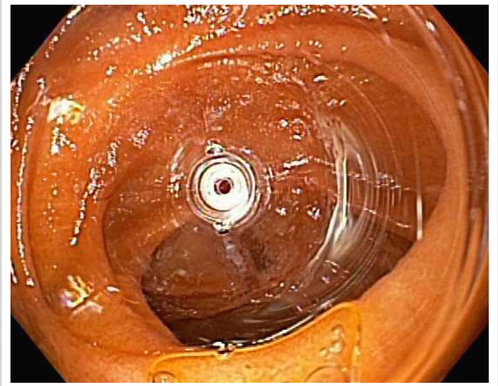

Figure 4. The stricture is successfully dilated and the endoscope is able to be advanced

CONCLUSIONS

- Benign duodenal strictures are typically managed with endoscopic dilation using TTS balloon dilators, although this method is limited by the lack of haptic feedback or complete visualization in some cases
- In this case, TTS balloon dilation was ineffective for initial stricture dilation, thus the BougieCap was used for more precise dilation under direct visualization
- While the BougieCap is generally used for esophageal stricture dilation, it may also serve as a safe and effective method to dilate refractory benign duodenal strictures

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