Lesson Learned from Endoscopic Management of a Recurrent Staple-Line Leak that Progressed to Gastro-Pleural Fistula, a Rare but Dreaded Long-Term Complication of Sleeve Gastrectomy

Joseph Sujka, M.D; Katsiaryna Khatskevich, B.S; Ali Abbas, M.D; Christopher DuCoin, M.D

USF Health Morsani College of Medicine, Tampa Florida

Abstract

- This is a 51-year-old woman with previous conversion of lap band to sleeve gastrectomy who developed a persistent leak.
- Over a year and a half, she underwent multiple interventions directed towards percutaneous drainage and endoscopic closure. These interventions were initially successful but complicated by reoccurrence of the leakage three times.

Case Presentation

- Initially, pre-pyloric luminal stenting with a covered stent was performed successfully however her leak recurred and this was managed with external drainage for several months **(Fig. 1).**
- Several months later the leak recurred at the same location and was managed with over-the-scope clipping and external drainage. Post-operative Barium study showed leak resolution **(Fig. 2).**
- Two months later, the patient presented with severe dyspnea and large left pleural effusion. Imaging revealed a gastro-pleural fistula. A chest tube was placed followed by pulmonary decortication. Endoscopy showed a persistent leak with gastro-pleural fistula **(Fig. 3).**
- Ablation was performed with primary closure via endoscopic suturing. Outflow obstruction and gastric sleeve angulation were successfully addressed via placement of two fully covered 15.5cm transpyloric esophageal stents from the bulb to the GE junction, anchored with endoscopic suturing. This was confirmed via follow up Barium study **(Fig. 4).**

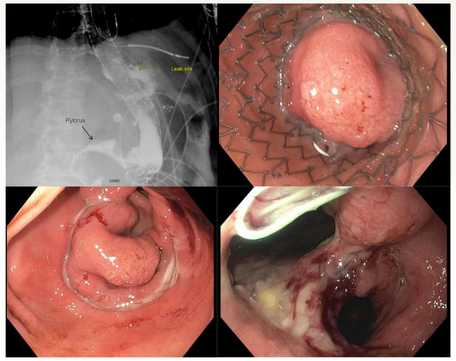


Fig. 1: Initial Therapeutic Failure

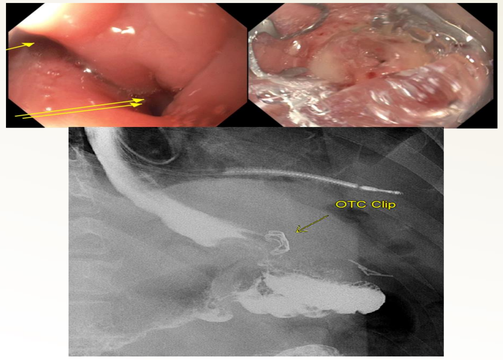


Fig. 2: OTSC Management of Recurrence

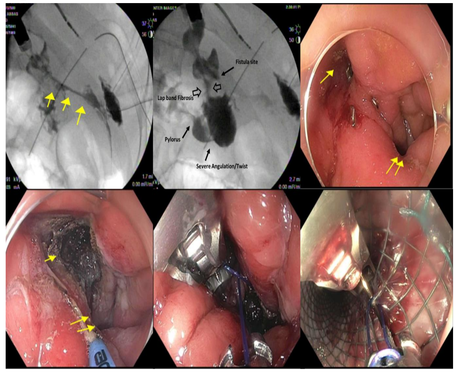


Fig. 3: Final Fistula Recurrence

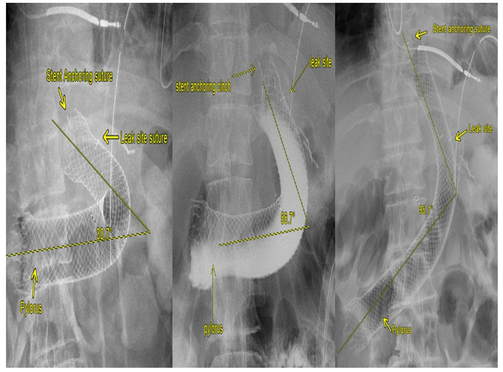


Fig. 4: Improvement of Gastric Sleeve Angulation

Discussion

- Leakage and fistula following sleeve gastrectomy is a rare but serious complication. Understanding the pathophysiology is crucial for successful endoscopic management.
- In this case, the first intervention failure was due to the pre-pyloric nature of the stent, causing outflow obstruction with constant reflux through the leak site.
- The second intervention failure was due to evolving strictures at the proximal sleeve (related to the prior lab band), and at the incisura (related to ongoing scarring/remodeling from chronic inflammation secondary to the leak).
- Addressing the outflow obstruction was essential in managing the latest fistula. Transpyloric stenting was needed due to the multilevel nature of the obstruction. Using a fully covered esophageal stent is off-label and often complicated by migration, and thus endoscopic suturing was utilized to reduce that risk.
- Additionally, angulation of the gastric sleeve is a major contributor to high intraluminal pressure, which can be addressed by stenting across the incisura.

Conclusion

- Management of gastric sleeve and fistulas is complex and requires real time clinical, endoscopic, and radiographic data in order to select the most suited approach such as primary closure, coverage, internal drainage, septotomy, addressing outflow obstruction, or combination of several of these techniques
- Prolonged healing, recurrence of leak, or progression to fistula are red flags for outflow obstruction, and techniques to address this issue should be strongly considered in the management of these cases.