

Silastic Septal Buttons: A safe, effective method to close tracheoesophageal fistulas

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ABSTRACT

Introduction: Large, leaking tracheo-esophageal fistulas (TEFs) are a significant source of morbidity, leaving many patients feeding-tube dependent and at risk for aspiration. Surgical closure is often unsuccessful, especially if the fistula is large or the patient has been irradiated.

Case Report: The first patient is a 64-year-old male with a history of total laryngectomy and postoperative radiation therapy and secondary tracheoesophageal puncture. The second patient is a 74-year-old male with a history of radiation therapy for Nonhodgkin's lymphoma with subsequent iatrogenic TEF during a tracheostomy procedure. Both patients failed multiple attempts to close the fistula. A customized silastic septal button was placed via endoscopy in the operating room, and both patients were able to resume oral intake without signs of leakage around the button.

Conclusion: Customized silastic septal buttons are a safe, effective way to close tracheoesophageal fistulas in patients who have failed other attempts at closure

INTRODUCTION

Tracheoesophageal puncture (TEP) is the gold standard for voice restoration after total laryngectomy. A tracheo esophageal fistula is created either at the time of laryngectomy (primary TEP), or delayed after the patient has healed from the initial surgery (secondary TEP). A one-way valve prosthesis is fitted in the fistula, allowing air into the tract for speech, but preventing aspiration of food or liquid when swallowing. Gradual widening of the TEP poses a significant problem for patients, putting them at risk for recurrent aspiration and pneumonia, and leaving many patients feeding-tube dependent. A meta-analysis including 19 studies calculated the summary risk of this complication as 7.2%. Often the problematic valve is removed and the fistula is allowed to close spontaneously. However, in a subset of patients, the fistula does not close and the patient must either remain NPO or undergo surgery to attempt closure.

Case 2

A 63 year old male s/p total laryngectomy and adjuvant radiation therapy in 2008 Secondary TEP was placed after completion of treatment in 2009. The TEP was removed in 2011, however the tract did not close. The patient underwent 2 surgeries, including a pectoralis myocutaneous flap to close the fistula. Both surgeries failed, and the patient had to have a gastrostomy tube placed. May 2012 he underwent placement of septal button in the operating room. The size of the septal button had to be adjusted, as it fell out once and had some leakage another time. However, it was able to be replaced in the clinic. The patient had a good result in terms of swallowing, and his PEG tube was removed

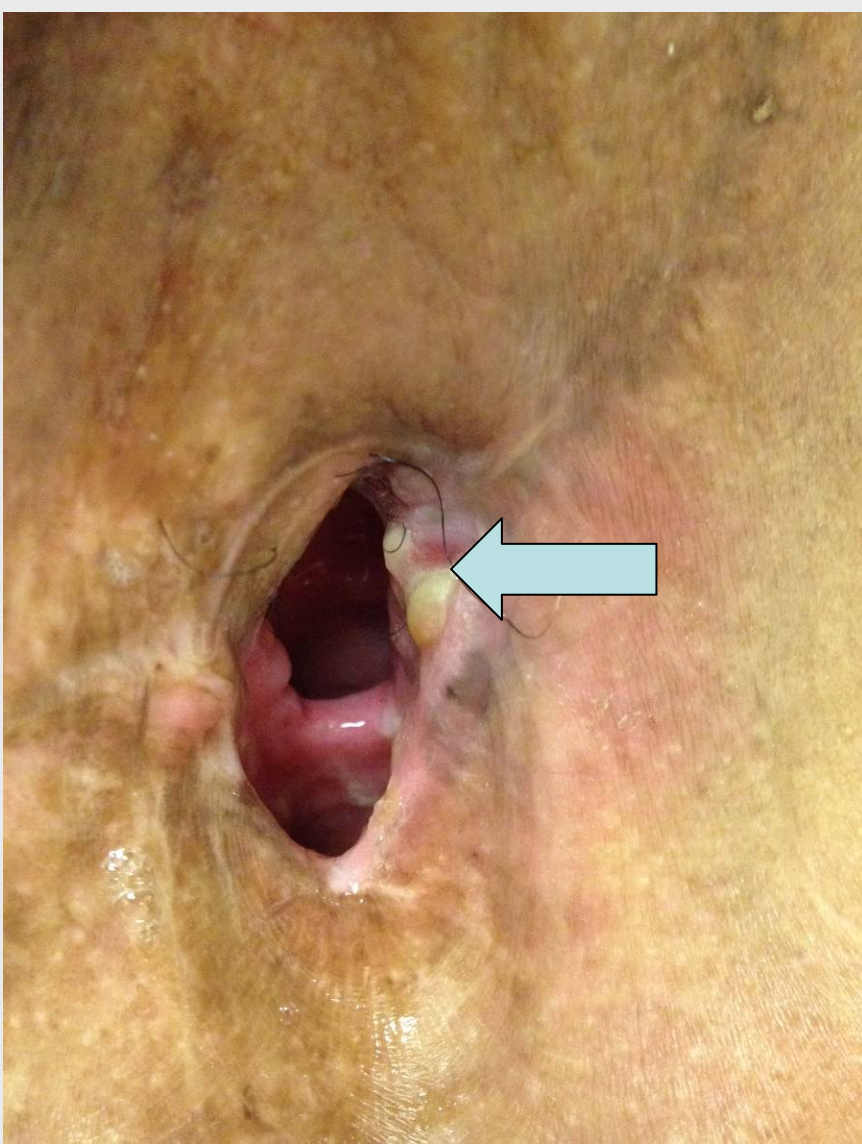


Figure 1. Persistent tracheoesophageal fistula, arrow points to esophagus.

Case 1

A 69 year old male with history of chemoradiation for nonHodgkins lymphoma approximately 10 years prior to presentation. Significant laryngeal and esophageal stenosis left him both tracheostomy and gastrostomy tube dependant. He also had an iatrogenic TEF which had failed multiple attempts at closure, including hyperbaric oxygen treatment and surgical interventions. A septal button was placed in the TEF in the operating room in July 2008. He achieved a good result in terms of both speech and swallowing. He followed up in clinic every 8 weeks for routine tracheostomy tube changes. The septal button remained in place for 3 years without complications until his death in 2011 from unrelated causes.



Figure 2. Custom nasal septal button, AP and lateral view.



Figure 3. (A) Septal button placed in TEF in the clinic. (B) Septal button held in place with laryngectomy tube

Conclusion

Persistent tracheo-esophageal fistula, although a relatively uncommon complication, is one with substantial impact on a patient's quality of life. In fact, a recent study showed presence of a gastrostomy tube as a significant factor associated with depression in head and neck cancer patients.² Factors that increase a patient's risk for TEP enlargement include prior radiation, poor nutritional status, hypopharyngeal tumors/extended laryngectomy, postoperative stricture, and disease recurrence.³ These factors are likely the same reasons patients fail attempts at closure. Cymetra injections are another low morbidity office-based intervention that have been effective in smaller fistulae.⁴ Use of silastic septal buttons as illustrated in these two cases is a safe and effective way to close larger TEFs. One of the great advantages as compared to surgical closure is that the success of the procedure is not dependant on the patient's ability to heal. Placement of the button is low risk and can be performed in the clinic. Most importantly, they are effective over the long term in preventing aspiration and allowing patients to resume a normal diet.

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