Hypopharyngeal perforation is a rare complication of anterior cervical spine surgery, and may present in a delayed fashion several years out from the initial surgery. Rate of esophageal injury following anterior cervical spine surgery has been cited at 0.1%. Development of a hypopharyngeal fistula is rarer still. Management of these cases has largely fallen to a range between primary repair and closure using vascularized flaps. We present a unique case in which an endoscopic staple assisted repair was chosen for a complex hypopharyngeal fistula.

66 year old male who underwent five level Anterior Cervical Decompression and Fusion (ACDF), with development progressive dysphagia ten years later. Endoscopy revealed operative hardware from the ACDF protruding through the posterior pharyngeal wall. Imaging findings suggested erosion of hardware into the esophagus (Fig. 1). Operative repair was carried out with hardware removal and muscle flap reconstruction, and patient did well. In follow-up complained of dysphagia, and returned to the OR for esophagoscopy and dilation. Intraoperative findings (Fig. 2) were consistent with a posterior hypopharyngeal wall fistula. After unsuccessful dilation, patient elected to undergo endoscopic lysis of the diverticulum, as performed for Zenker’s diverticulum. Using the Weerda laryngoscope, a GIA endoscopic stapler was used to marsupialize the fistula and create staple lines on either side of the division. Postoperatively, the patient recovered completely and resumed PO diet without further difficulty.

Abstract

Hypopharyngeal perforation is a rare complication of anterior cervical spine surgery, and may present in a delayed fashion several years out from the initial surgery. Rate of esophageal injury following anterior cervical spine surgery has been cited at 0.1%. Development of a hypopharyngeal fistula is rarer still. Management of these cases has largely fallen to a range between primary repair and closure using vascularized flaps. We present a unique case in which an endoscopic staple assisted repair was chosen for a complex hypopharyngeal fistula.

Case Review

66 year old male who underwent five level Anterior Cervical Decompression and Fusion (ACDF), with development progressive dysphagia ten years later. Endoscopy revealed operative hardware from the ACDF protruding through the posterior pharyngeal wall. Imaging findings suggested erosion of hardware into the esophagus (Fig. 1). Operative repair was carried out with hardware removal and muscle flap reconstruction, and patient did well. In follow-up complained of dysphagia, and returned to the OR for esophagoscopy and dilation. Intraoperative findings (Fig. 2) were consistent with a posterior hypopharyngeal wall fistula. After unsuccessful dilation, patient elected to undergo endoscopic lysis of the diverticulum, as performed for Zenker’s diverticulum. Using the Weerda laryngoscope, a GIA endoscopic stapler was used to marsupialize the fistula and create staple lines on either side of the division. Postoperatively, the patient recovered completely and resumed PO diet without further difficulty.

Discussion

The rate of anterior cervical spine surgery in the United States has risen by as much as 800% between 1990-2000. Given the increase in surgical volume, complications following this procedure have also increased, though the overall percentage of these complications remains stable between 3-6%. The incidence of immediate post-operative dysphagia has been cited at just over 70%, with a progressive decrease to just 8% after twelve weeks. The development of pharyngoesophageal fistulae following anterior cervical surgery is uncommon, with less than 15 cases in the literature. Repair of esophageal fistula is a complicated undertaking. Most patients who develop these require several procedures, with primary repair being attempted initially in most cases. However, in chronic esophageal injuries such as diverticula and fistula, this repair commonly failed due to the poor tissue quality, and additional tissue in the form of vascular flaps may be utilized. Here, we report on a novel technique of endoscopic marsupialization of a fistula that may be a useful procedure in select patients.

Conclusion

Postoperative development of an esophageal fistula is a rare complication of anterior cervical surgery. We suggest that endoscopic repair may be possible in selected cases, and can be added to the surgical armamentarium.

References

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