

A NOVEL SURGICAL APPROACH FOR THE RECREATION OF A PHARYNGO-EPIGLOTTIC FOLD FOR THE MANAGEMENT OF DYSPHAGIA FOLLOWING INTUBATION TRAUMA

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Background

Introduction: Prolonged intubation is a well described cause of iatrogenic airway injury in the pediatric population. Intubation trauma in the pediatric population results a variety of known airway complications including edema, formation of granulation tissue, subglottic and tracheal stenosis.

While there are certain predictable patterns of injury even with optimal management, prolonged intubation can result in unusual presentations of airway injury with a variety of less common sequelae that can necessitate the development of novel surgical approaches.

Here we present a case of pharyngoepiglottic fold injury secondary to prolonged intubation leading to aspiration.

Case Presentation:
 A 10 month-old male with a complex cardiac history presented with a weak cry and dysphagia. History was notable for a previous 3- month intubation and gastrostomy tube dependence.

Fiberoptic endoscopic evaluation of swallowing (FEES) revealed mobile vocal cords and an absent right pharyngoepiglottic fold through which aspiration over the defect was observed.

Initial micro-laryngoscopy revealed scarring of the residual pharyngoepiglottic (PEF) fold to the false vocal fold.

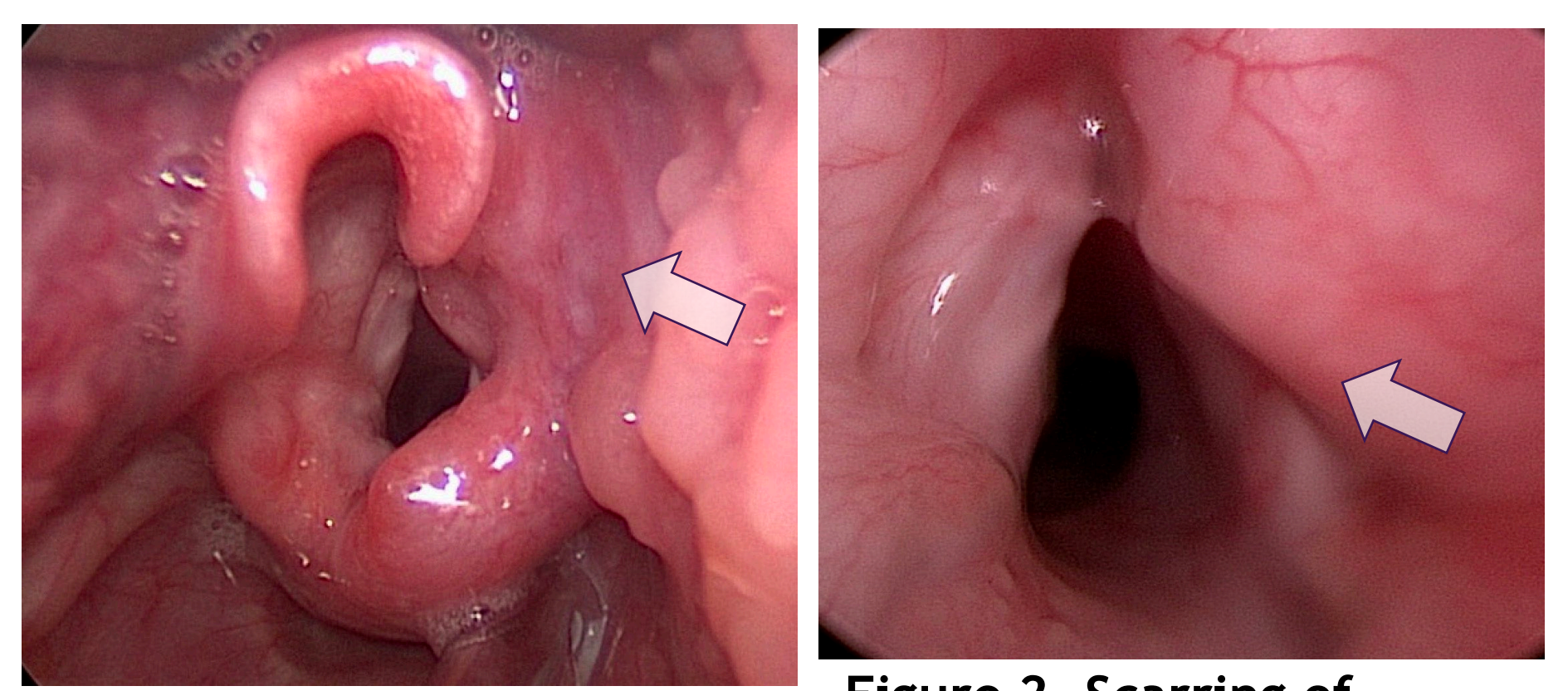


Figure 1. Absent right pharyngoepiglottic fold
 Figure 2. Scarring of residual pharyngoepiglottic fold to the false vocal fold.

Methods

Surgical Technique:
 The patient was suspended with an infant laryngoscope and maintained on insufflation. The plane between the right vocal cord and the scar-band false vocal and residual pharyngoepiglottic fold was identified. The CO2 laser was used divide the scar and to raise a right posteriorly-lateral based mucosal flap

The rotational mucosal flap was raised to recreate and resuspend the right pharyngo-epiglottic. On 4 week follow up, a FEES exam demonstrated presence of the pharyngoepiglottic fold with decreased aspiration. A follow up procedure with injection of Prolaryn into the neo-pharyngeal epiglottic fold was done to increase bulk 8 weeks later. A subsequent video swallow showed resolution of all aspiration

Results

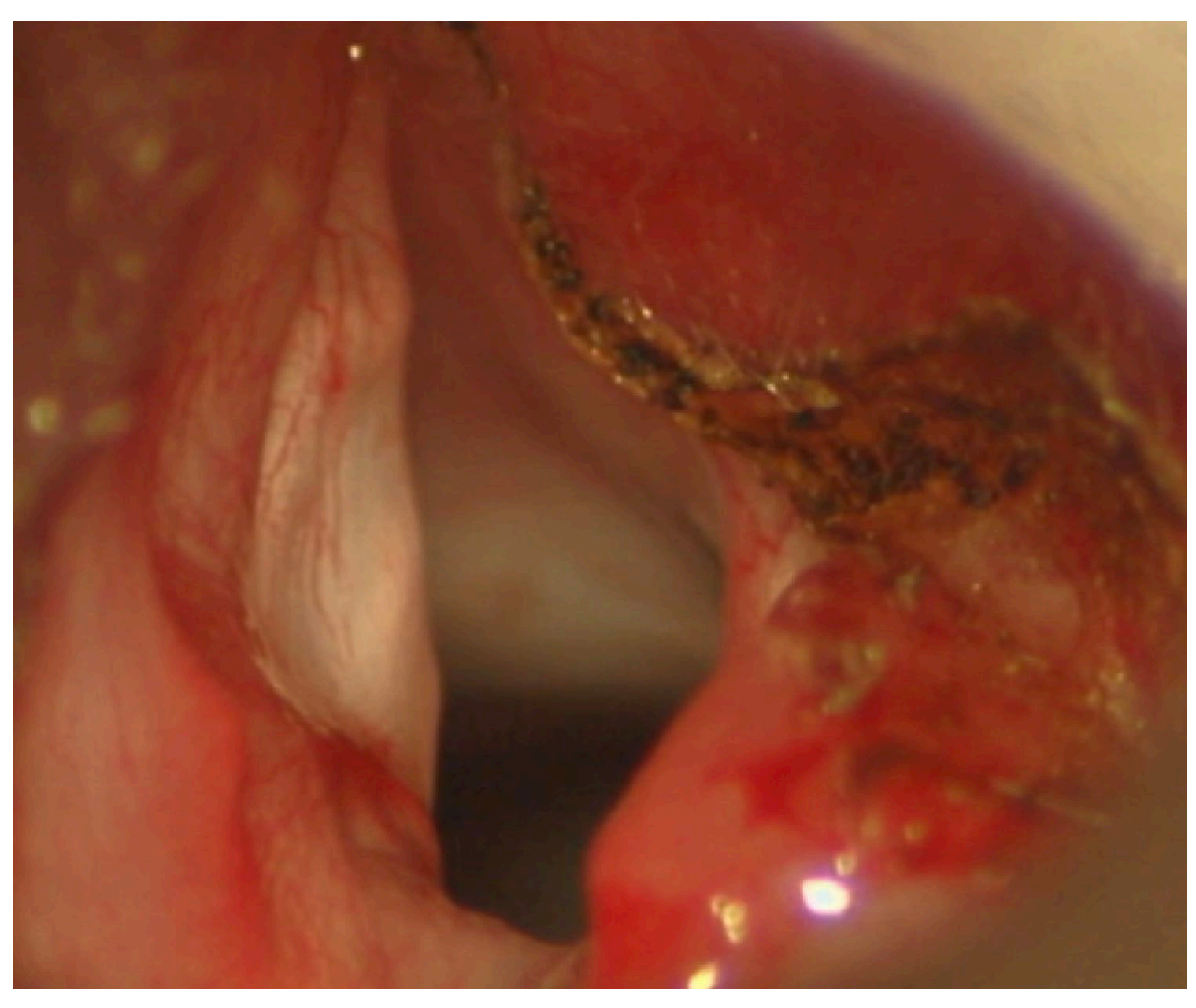


Figure 3. CO2 laser division of aryepiglottic fold and scarred pharyngoepiglottic fold

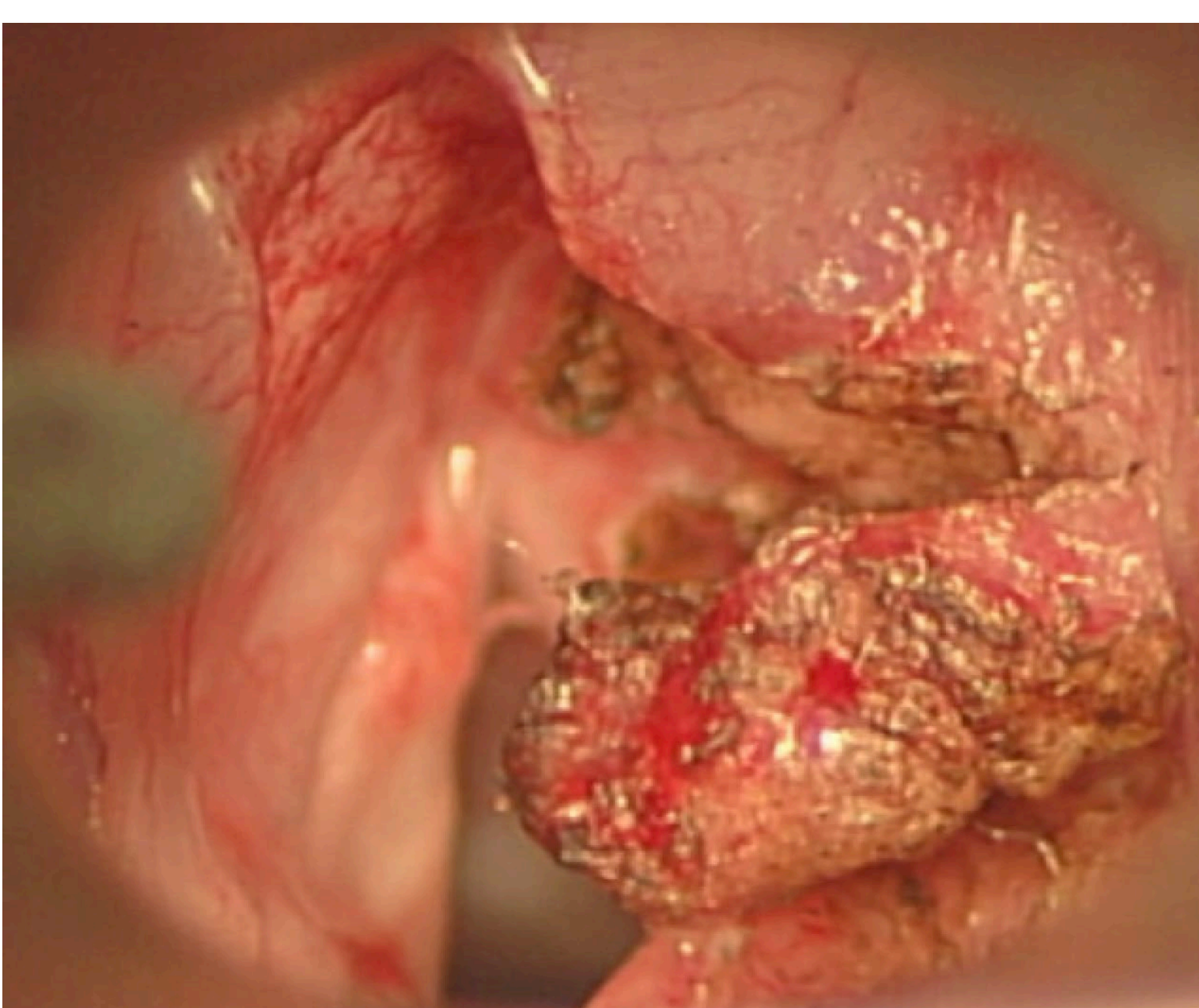


Figure 4. Elevation and rotation of posteriorly based mucosal flap

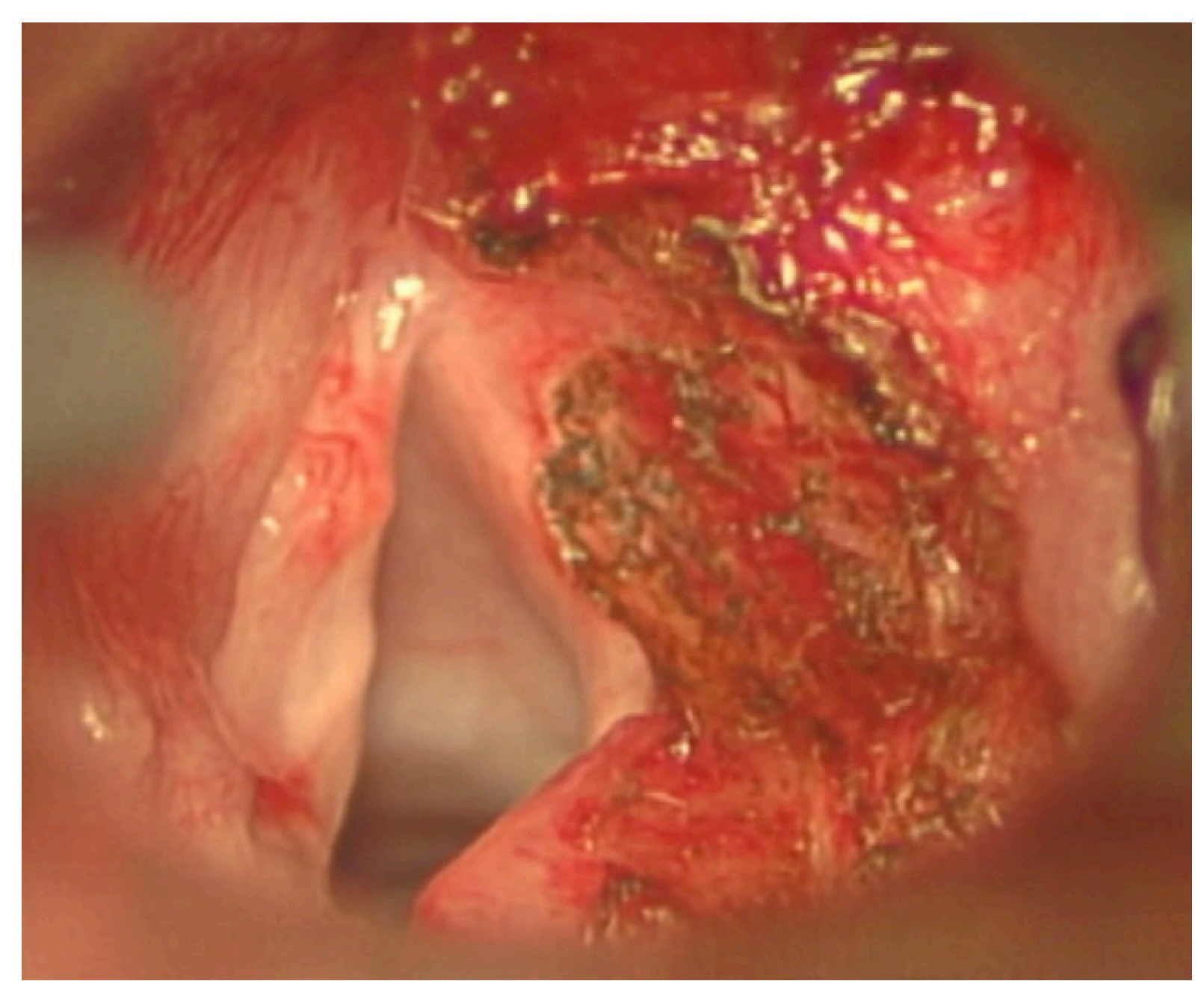


Figure 5. Surgical bed after flap has been rotated

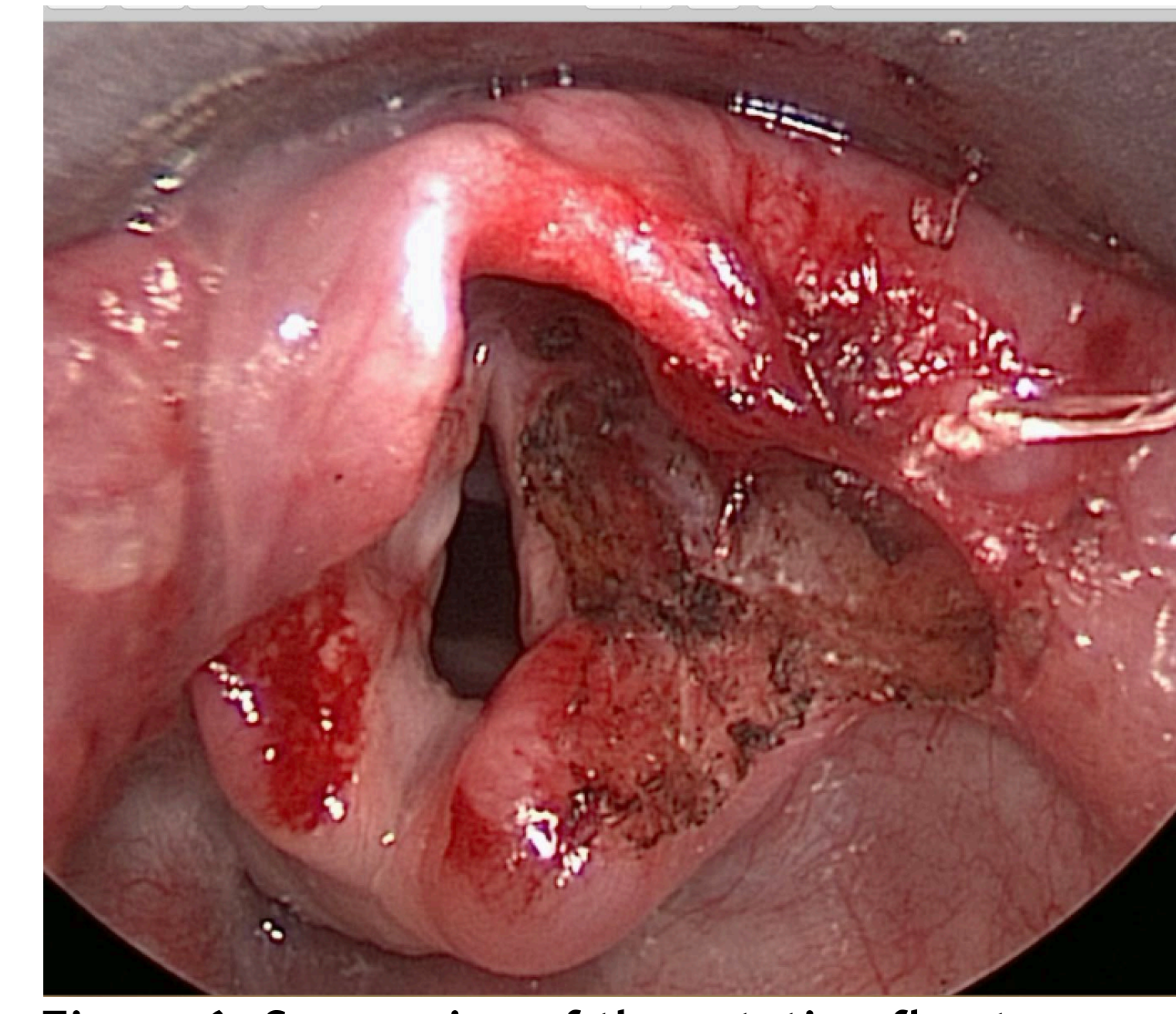


Figure 6. Suspension of the rotation flap to recreate the pharyngoepiglottic fold

Discussion

Over the past several decades, there has been a decrease in intubation trauma with growing awareness and a range of prevention strategies.

Despite this trend, prolonged intubation remains a common etiology for subglottic, tracheal stenosis, and cricoarytenoid joint fixation. Mucosal trauma to the pharyngoepiglottic fold has been described but there are few cases in the literature describing the surgical management pharyngoepiglottic fold scarring.

Given the uncommon nature of this unique problem there are no well described or established surgical methods for the re-creation of a pharyngo-epiglottic fold.

We present a novel surgical technique for the recreation and resuspension of a pharyngoepiglottic fold using a rotational flap to improve swallow function following intubation injury.

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Disclosure

No authors have any contributions or financial disclosures to report in the establishment of this project.