You Never Know What You Might Find – Tracheo-Esophageal Fistula from Extrusion of a Spinal Fusion Fixation Screw

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Case Report and Review

A 41-year-old male with hepatobiliary adenocarcinoma metastatic to the cervical and thoracic spine presented with cough, copious sputum production and respiratory failure. Fourteen

months antecedent, anterior fusion of C-7 to T-1 and posterior spine stabilization with external rod fixation for a pathologic fracture was performed. A chest radiograph demonstrated hardware in an appropriate position (fig. 1a). Computed tomography displayed displacement of the anterior fusion plate (AFP) and fix-

Fig. 1. **a** Initial posteroanterior radiograph. **b** Displacement of the AFP and fixation screws abutting the membranous trachea. **c** TEF at the margin of the left mid trachea. **d** Locking head of the anterior plate screw visible with respiration.

ation screws (fig. 1b). The oblique orientation of the AFP with protruding left-sided fixation screws led to anterior compression of the esophagus and effacement of the membranous trachea. Fiberoptic bronchoscopy was performed with consideration of a tracheal stent placement. In the left posterior trachea, 5 cm distal to the subglottic shelf at the margin of the cartilaginous and membranous portions, copious pus emanated from a trachea-esophageal fistula (TEF) (fig. 1c). Suctioning revealed a 1-cm TEF, and the locking head of the AFP screw was visible (fig. 1d). Copious secretions causing symptomatic bronchorrhea dictated placement of an airway stent. The patient died in hospice 4 weeks later.

Anterior cervical fusion rarely leads to airway compromise. Causes of airway compromise may include perivertebral soft tissue swelling, dural leak with cerebrospinal fluid collections, compressive hematoma, and screw protrusion causing abscess formation, as well as phrenic nerve disturbances due to perivertebral swelling or direct injury [1, 2]. We report, to our knowledge, the first case of AFP fixation screw dislodgement leading to TEF and respiratory failure. Due to our patient's advanced metastatic disease, airway stenting with a self-expanding metallic stent provided palliation and correction of respiratory derangement.

References

- 1 Wong DT, Fehlings MG, Massicotte EM: Anterior cervical screw extrusion leading to acute upper airway obstruction: case report. *Spine* 2005;15:E683–E686.
- 2 Fujiwara H, Nakayama H, Takahashi H, Shimizu M, Hanaoka K: Postoperative respiratory disturbance after anterior cervical fusion. *Masui* 1998;47:475–478.