DELAYED PRESENTATION OF ESOPHAGEAL PERFORATION OF AN INTACT CERVICAL PLATE AND SCREW CONSTRUCT

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Purpose: Anterior cervical discectomy and fusion (ACDF) with plating is an effective and widely used technique for the treatment of traumatic cervical injuries. Dysphagia after ACDF is a very common occurrence. Generally, it is mild in nature, and resolves within several months. Esophageal perforation is a rare complication of this surgical approach, and the esophageal wall can be eroded by a screw or the plate in a delayed manner. The authors present a case involving extrusion of the entire cervical plate and screw complex into the lumen of the esophagus, where it likely resided for months or years contributing to persistent but only minor swallowing difficulties.

Methods:
Case Report
A 77-year-old female presented to the hospital with a chief complaint of severe neck pain and right upper extremity weakness, numbness and pain after a motor vehicle accident. A cervical spine CT scan and MRI were obtained which demonstrated a hyperextension injury through an ankylosed spine at the C6 and C7 levels. The patient underwent an anterior cervical fusion and plating followed by a posterior cervical decompression and fusion and instrumentation. Postoperatively, the patient had complete resolution of her neurological deficits, but complained of mild dysphagia. A CT scan done nine months after surgery showed a solid fusion with the plate well fixed to the bone. The patient continued to have mild swallowing difficulties for the next several years. Four years after the index surgery the patient fell and sustained a head injury. A CT scan showed the plate and screw construct to be completely disengaged from the bone and in the soft tissues of the neck. During the surgical procedure to remove the plate, the tip of a screw was felt through the esophagus and when the esophagus was incised it was noted that the entire plate/screw construct was within the lumen of the esophagus. The posterior wall of the esophagus was completely intact with no evidence of damage. The instrumentation was removed as a single specimen, and the esophagus was repaired over a stent. The patient left the hospital one month after the procedure and has had a good recovery with no further swallowing difficulties.

Discussion: Since its first description in 1955, the Smith-Robinson approach and anterior cervical discectomy and fusion have been used in the treatment of traumatic and degenerative conditions of the cervical spine. This procedure generally has satisfactory results and has a very low complication rate. Screw and plate fixation of the cervical spine has been utilized to help establish immediate stability and to enhance the rate of fusion in these procedures. A rare complication of instrumentation is the “backing-out” of a screw or even full disengagement of the plate from the bone - at times this can lead to erosion into the esophagus. This complication may present with symptoms that range from the benign to the fatal. Although rare, multiple cases have been reported in the literature, and diagnosis can be missed due to the delayed presentation of the complication, the non-specific symptoms, and a low index of suspicion.
**Conclusion:** Persistent dysphagia can be seen in elderly patients treated with a cervical fusion and plating and should be closely followed with sequential radiographs. The plate/screw construct may disengage from the bone as a single unit, and in a delayed manner, even if postoperative radiographs confirm a solid cervical fusion and a well-fixed plate initially. Elective removal of the cervical instrumentation should be considered in this patient population.