Spinal Warfare: Pharyngoesophageal Erosion after Anterior Cervical Discectomy and Fusion

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Introduction

- Hemoptysis is a rare presentation of pharyngoesophageal erosion (PE), the incidence of which is unknown.
- We present an interesting case of a patient with history of anterior cervical discectomy and fusion (ACDF) who complained of recurrent hemoptysis and had spinal hardware eroding into the cricopharynx.

Case Description

- A 67-year-old male with history of C4-C7 ACDF in 1999 with subsequent C3-C4 ACDF in 2017 presented with complaints of mixed hematemesis and hemoptysis.
- Two years prior, he had an episode of hemoptysis with extensive evaluation without a clear identifiable source. Esophagoduodenoscopy (EGD) performed at that time showed a friable oral lesion in the tonsillar area with no evidence of bleeding or prominent vasculature on follow-up fiberoptic laryngoscopy. A second EGD performed four months prior to admission was normal.
- On presentation, the patient had large volume hematemesis and hemoptysis eventually requiring a total of three units of packed red blood cells. CT with GI bleed protocol was negative and therefore repeat EGD was performed which showed spinal hardware including screws in the cricopharynx (Figure 1). CT soft tissue neck with contrast (Figure 2) was obtained revealing increased lucency around the metal screws in all vertebral bodies, worse at C3 consistent with loosening.
- The patient was transferred to a tertiary care facility. ACDF hardware was removed and a pharyngoplasty was performed using sternocleidomastoid (SCM) flap and free fat graft from left thigh without any complications.
- He was discharged to home on postoperative day two at which time he was tolerating oral intake. Pharyngogram was performed on postoperative day four which demonstrated no contrast leak.

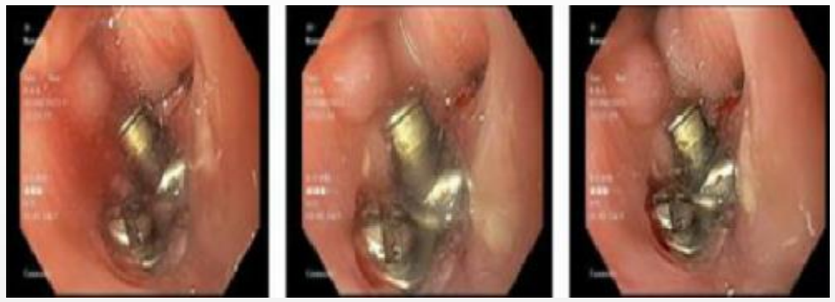

Figure 1: Hardware including screws in the cricopharyngeus (piriform sinuses and oropharynx)

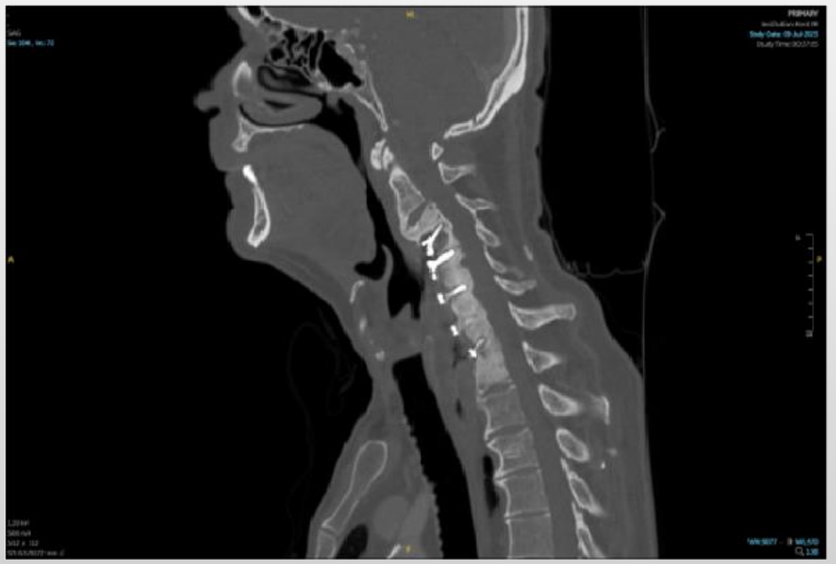

Figure 2: CT soft tissue neck with sagittal bone window showing screws in the multiple levels of previous ACDF and bone loss around superior most screws.

Discussion

- ACDF is a common spinal surgery performed for degenerative cervical disc disease, cervical radiculopathy and/ or myelopathy and fractures. It is associated with a low postoperative morbidity. The most common complications after ACDF include dysphagia, recurrent laryngeal nerve injury, hematoma, infection and Horner's syndrome.
- PE is an uncommon complication that is associated with high morbidity and mortality and occurs in up to 1.52% of cases. However, this incidence rate is based on very limited data.
- Most commonly this complication is seen intraoperatively but in rare cases, as in our patient's case, it is a delayed presentation due to chronic trauma from hardware or from partial or full extrusion of the hardware.
- The time from initial ACDF to delayed occurrence of pharyngeal erosion is not well studied with an average time range between two to seventeen years.
- Dysphagia is the most common presentation of PE. Other common complaints are odynophagia, globus sensation and neck pain. No precise risk factors have been identified.
- Given high mortality rates, surgery should be performed as soon as possible without delay. The standard treatment approach is use of a SCM flap for closure with removal of hardware. Radial forearm, omohyoid, latissimus dorsi, omental or jejunal flaps may also be used.
- Due to the high risk of infection from leakage of esophageal and gastric content, broad spectrum antibiotics including antifungals should be initiated. The patient should initially be kept NPO and started on nutritional support until oral feedings can be started. To rule out an esophageal leak or postoperative ileus, contrast esophagram should be obtained on postoperative day seven.

Conclusions

- Our case highlights PE as a rare complication of ACDF and the importance of early recognition.
- PE should be suspected in any patient with a prior history of ACDF presenting with unexplained hemoptysis.
- PE is a surgical emergency.
- While our patient remained hemodynamically stable, delay of care due to improper diagnosis could have led to a fatal outcome.

References

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