Esophageal perforation in closed neck trauma

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INTRODUCTION

Esophageal perforation is rare in blunt neck injuries, but it carries a 20% mortality rate. This high mortality rate is caused by delays in diagnosis because of not considering the injury in these circumstances, preventing proper treatment to be carried out before severe complications ensue.

Here, we provide an example and the basis for its recognition and management, according to data from the current literature.

CASE PRESENTATION

A 17 year-old male came to our clinic complaining of pain and vomits upon swallowing for about one week after having fell from a bicycle and having his body turned on its neck axis. He was assessed twice in other clinics, and was prescribed analgesics and anti-vomiting medication, without improvements. He was submitted to a CT scan, which showed neck emphysema and pneumorachis (Figure 1 A-B), and an MRI scan confirmed he also had a ligament injury between T1 and T2 and a blood workup showed mild leukocytosis. Although the gastric endoscopy did not show injuries, immediate exploratory neck surgery was indicated, which revealed a 1.5 cm esophageal rupture in the neck-chest transition area, and rupture of muscles and intervertebral ligaments. The esophagus was sutured and the neck was drained. The patient was submitted to antibiotic treatment and, after 24 hours, was sutured and the neck was drained. The patient was submitted to antibiotic treatment and parenteral nutrition with resolution of the perforation, without other complications.

DISCUSSION

Esophageal perforations have been increasingly seen because of a raise in the number of diagnostic and treatment endoscopy, and its incidence has been estimated to be 3.1-1000,000/year². Today, 60% of the perforations are iatrogenic, secondary to endoscopic and neck/chest procedures, 15% are spontaneous (Boerhaave’s syndrome), more commonly seen in the thoracic or abdominal portions of the esophagus, and only 2% to

Figure 1. A: CT scan showing neck extraluminal air (clear arrow) and air in the spinal canal (dark arrow). B: Extensive air collection in contact with the esophageal wall.

preferable, due to a lesser risk of mediastinal inflammatory reaction, more commonly associated with the use of barium contrasts. Nonetheless, its use does not detect small esophageal perforations in up to 50% of the cases, favoring the use of barium contrast medium in some institutions. Stiff esophagoscopy was the second most utilized exam in a study involving 405 patients from 34 trauma centers in the US, followed by flexible endoscopy - which may be associated with esophagography in cases of suspicion of esophageal injury with an initially-normal radiographic exam, boasting up to 100% specificity³. The most recommended initial approach is primary esophageal suture, utilized in about 80% of the cases, associated with neck drainage, antibiotic treatment and enteral or parenteral nutrition³.

FINAL REMARKS

Esophageal perforation is rare in blunt neck injuries, but it should be suspected in high-speed injuries with neck over-extension.

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