Delayed Diagnosis of Aerodigestive Foreign Body Presenting as a Mediastinal Abscess

Kavita Dedhia MD1, Stefan Scholz, MD2, Cuneyt M. Alper, MD1

1Department of Pediatric Otolaryngology, Children’s Hospital of Pittsburgh of University of Pittsburgh Medical Center Pittsburgh (UPMC), 2Department of Pediatric Surgery, Children’s Hospital of Pittsburgh of UPMC

OBJECTIVES: To describe delayed diagnosis of an underlying aerodigestive foreign body in an infant presenting with a mediastinal abscess.

METHOD: We report the case of a 15-month-old female with a 2-week history of intermittent noisy breathing presenting with respiratory distress. Initially, this was attributed to an upper respiratory tract infection. Her symptoms progressed and she was taken to a local emergency room (ER). In the ER, she became stridorous with increasing respiratory distress. A chest x-ray showed tracheal deviation. She was subsequently intubated and transported to our institution. A computed tomographic scan (CT) showed a mediastinal abscess causing tracheal deviation (Figure 1). Initial differential diagnoses were infected thyroglossal duct cyst, infected lymphangioma, lymphoma, thymoma, ectopic thyroid tissue, or ectopic thyroglossal duct cyst.

The abscess was drained by interventional radiology on hospital day 1; approximately 0.7cc of purulent discharge was aspirated. Despite this procedure, symptoms did not improve and she failed extubation over the next 10 days. Additionally, repeat Magnetic Resonance Imaging (MRI) (Figure 2) continued to show tracheal deviation and reformation of the mediastinal abscess. At this time, the otolaryngology team was consulted for airway evaluation and possible extubation in the operating room. Rigid bronchoscopy showed almost complete posterolateral tracheal compression (Figure 3) and the tip of a foreign body in the posterior wall of the mid trachea (Figure 4).

There was a significant amount of resistance, when the foreign body was grasped for endoscopic removal. Unsure about the size of the foreign body, endoscopic removal was abandoned not to cause further airway trauma. Rigid esophagoscopy showed an area of granulation tissue and healing mucosa in the cervical esophagus, however, there was no visible mucosal defect (Figure 5).

Upon further review of the CT scan there was a lucent structure that was bridging between the esophagus and the trachea, which we presumed was the suspected foreign body (Figure 6).

The pediatric surgery team was consulted to help with surgical management. We used our rigid bronchoscope to assist in the location of the foreign body, while the pediatric surgery team explored the neck and mediastinum. We identified a 2 x 3 cm hard plastic foreign body, drained the abscess between the trachea and esophagus, and repaired the esophageal defect (Figure 7).

CONCLUSIONS: Mediastinal abscesses are often missed by the radiologist. Patients with chronic esophageal foreign bodies may present with respiratory symptoms, such as cough, asthma, chronic cough or respiratory distress. 1, 2 A majority of patients with esophageal foreign bodies are between 1-5 years old, and is reported to be unreported in approximately 16%. 3 Presence of chronic esophageal foreign bodies can lead to severe complications such as mediastinal abscess, which can be a grave condition, if it is not appropriately managed. 4 One should have high clinical suspicion for an aerodigestive foreign body in a healthy infant presenting with a mediastinal abscess, with negative radiologic studies. Especially foreign bodies made from plastic cannot be appropriately pictured on relevant imaging and are often missed by the radiologist. Patients with such findings should undergo a thorough upper aerodigestive tract evaluation.

REFERENCES