Images in Emergency Medicine

Descending Necrotizing Mediastinitis in an Infant

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Section Editor: Sean O. Henderson, MD
Submission history: Submitted December 3, 2014; Revision received December 26, 2014; Accepted January 13, 2015
Electronically published March 2, 2015
Full text available through open access at http://escholarship.org/uc/uciem_westjem
DOI: 10.5811/westjem.2015.1.24926

CASE
A nine-month-old girl was brought to the emergency department because of right neck swelling. She had recently been discharged from the same hospital after a brief admission for pneumonia that had followed influenza.

The mother denied noticing increased drooling, dyspnea, or stridor. Pooled oral secretions were present on physical exam, but the patient was calm with normal vital signs (Figure 1). Computed tomography (CT) of the neck revealed a large retropharyngeal abscess tracking caudally into the posterior mediastinum (Figure 2). The infection extended into the adjacent right carotid sheath, producing a dramatic “Lincoln’s Highway” sign (Figure 3).

DISCUSSION
Descending necrotizing mediastinitis (DNM) is a rare complication of retropharyngeal abscess (RA). The retropharyngeal space is bounded in the anteroposterior axis by the buccopharyngeal and prevertebral fascia, and extends from the base of the skull to the posterior mediastinum.1 Most cases of nontraumatic RA occur in children <5 years old, whose retropharyngeal lymph nodes have not yet involuted, predisposing to abscess formation.2,3

In DNM, caudal spread of the infection (by mixed flora) is facilitated by gravity and negative intrathoracic pressure.4 Recent reports suggest that RA and DNM are on the rise, which may be due to the increasing role of aggressive

Figure 1. Notable swelling of the patient’s right neck.
Figure 2. Hypointense retropharyngeal abscess tracking inferiorly into the mediastinum (arrows).
bacteria such as community-acquired methicillin-resistant staphylococcus aureus (MRSA) in their pathogenesis.\textsuperscript{5,6}

Children typically present with irritability, neck pain, and increased secretions; stridor is infrequently observed. Lateral neck radiographs demonstrate widening of the prevertebral soft tissue, defined as a diameter equal or larger to that of the contiguous vertebral body.\textsuperscript{7} DNM is suggested by widening of the mediastinum seen on chest radiograph, but contrast-enhanced CT remains the imaging modality of choice.\textsuperscript{8} After airway assessment, all patients should be started on intravenous clindamycin and consulted to otolaryngology or interventional radiology to evaluate for possible abscess drainage.\textsuperscript{3,9}

The patient was given one dose of IV clindamycin in the emergency department. Her airway remained patent, and she was transferred to a pediatric hospital for drainage of the abscess. She did well and was discharged home on oral antibiotics on postoperative day 5.

Figure 3. In the coronal view, the abscess (arrow) can be seen within the carotid sheath, separating the jugular vein (v) from the carotid artery (a).

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Conflicts of Interest: By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.

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