Gemella morbillorum mediastinitis and osteomyelitis following transesophageal endoscopic ultrasound-guided fine-needle aspiration of a posterior mediastinal lymph node

A 78-year-old man with a history of colon cancer was found on follow-up examinations (abdominal computed tomography and positron-emission tomography scans) to have an 8-mm posterior aortopulmonary-window lymph node that was suspected to be malignant (Figure 1, Figure 2). Radial endoscopic ultrasound (EUS) revealed a 10-mm lymph node in the posterior aortopulmonary window (Figure 3). Transesophageal EUS-guided fine-needle aspiration (FNA) was performed with five passes, using a 22-gauge needle (Figure 4). No antibiotic prophylaxis was given. There were no immediate complications. Cytological examination subsequently revealed this to be benign lymphoid tissue.

Five days later, the patient developed chest pain, fevers, and an elevated white blood cell count. Chest computed tomography revealed inflammatory changes extending from the posterior aortopulmonary lymph node (arrow), which had undergone EUS-FNA, to the vertebral bodies at the same level. Note the new inflammatory changes anterior to the vertebral body, which has displaced the aorta to the left (Figure 5). Four sets of blood cultures grew *Gemella morbillorum*. Thoracic spine magnetic resonance imaging 6 weeks after the EUS-FNA revealed diskitis and osteomyelitis at T5/6 (Figure 6). The patient was successfully treated with intravenous ceftriaxone for a total of 12 weeks, and then with oral amoxicillin for several months until all the symptoms and radiographic changes had resolved.

This is the first reported case of transesophageal EUS-FNA of a posterior mediastinal lymph node causing mediastinitis and osteomyelitis. The mediastinitis was probably caused by seeding of the target lymph node by an FNA needle contaminated by *G. morbillorum*, a facultative, anaerobic, aerotolerant, Gram-positive coccus which is a natural inhabitant of the human oropharynx [1].

**Table 1** summarizes the clinical details of the seven previously reported cases of mediastinitis caused by transesophageal EUS-FNA, as well as this present case [2–
Five of these were mediastinal cysts, and this has led to the recommendation that EUS−FNA should be avoided in cases where there is clearly a posterior mediastinal cyst, and that antibiotics should be given if an unsuspected cyst is aspirated. Two of these cases reported mediastinitis after EUS−FNA of mediastinal lymph nodes.

Endosonographers should be aware that mediastinitis can occur after transesophageal EUS−FNA of any solid posterior mediastinal lesion, and not only where the lesion is cystic.

Acknowledgment

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Table 1  Reported cases of mediastinitis as a complication of transesophageal endoscopic ultrasound-guided fine-needle aspiration (FNA)

<table>
<thead>
<tr>
<th>Author(s) [ref. no.]</th>
<th>Year</th>
<th>Lesion biopsied</th>
<th>FNA or Trucut</th>
<th>Antibiotics</th>
<th>Complications</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryan et al. [2]</td>
<td>2002</td>
<td>Cyst</td>
<td>FNA</td>
<td>Yes</td>
<td>Incidental Candida organisms found at resection</td>
<td>Thoracotomy</td>
</tr>
<tr>
<td>Wildi et al. [3]</td>
<td>2003</td>
<td>Cyst (solid-appearing)</td>
<td>FNA and Trucut</td>
<td>No</td>
<td>Mediastinitis and sepsis</td>
<td>Thoracotomy</td>
</tr>
<tr>
<td>Annema et al. [4]</td>
<td>2003</td>
<td>Cyst</td>
<td>FNA</td>
<td>No</td>
<td>Mediastinitis (Streptococcus pneumoniae)</td>
<td>Thoracotomy</td>
</tr>
<tr>
<td>Westerterp et al. [5]</td>
<td>2004</td>
<td>Cyst (solid-appearing)</td>
<td>FNA</td>
<td>No</td>
<td>Mediastinitis</td>
<td>Endoscopic fenestration</td>
</tr>
<tr>
<td>Varadarajulu et al. [6]</td>
<td>2004</td>
<td>Cyst</td>
<td>Trucut</td>
<td>No</td>
<td>Mediastinitis</td>
<td>Thoracotomy</td>
</tr>
<tr>
<td>Will et al. [8]</td>
<td>2005</td>
<td>Lymph node (malignant)</td>
<td>FNA</td>
<td>No</td>
<td>Mediastinitis and esophageo-mediastinal fistula</td>
<td>Thoracotomy</td>
</tr>
<tr>
<td>Savides et al.</td>
<td>2006</td>
<td>Lymph node (benign)</td>
<td>FNA</td>
<td>No</td>
<td>Mediastinitis and osteomyelitis (Gemella morbillorum)</td>
<td>Antibiotics</td>
</tr>
</tbody>
</table>

References


Bibliography

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