12yoM presenting with chronic cough, shortness of breath, and abnormal inflammatory markers

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Patient Presentation

• HPI
  • 12yoM presenting with persistent respiratory symptoms with prior CXR from OSH suggesting “round pneumonia”
  • Treated with amoxicillin x 10 days with no change on CXR and symptoms of dyspnea and coughing continued for the next month

• Lab Findings
  • Spirometry: FVC 2.63; FEV1 2.35; FEV1/FVC 89.43
  • RVP: positive for rhinovirus/enterovirus
  • ESR: 101 mm/hr
  • CRP: 12 μg/mL
What Imaging Should We Order?
## ACR Appropriateness Criteria

### Variant 8:
**Child. 3 months of age and older. Immunocompetent. Recurrent localized pneumonia by chest radiograph. Next imaging study.**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>CTA chest with IV contrast</td>
<td>Usually Appropriate</td>
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<td>CT chest with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>CT chest without IV contrast</td>
<td>May Be Appropriate (Disagreement)</td>
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<tr>
<td>MRI chest without and with IV contrast</td>
<td>Usually Not Appropriate</td>
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<td>US chest</td>
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Findings: CT Chest with contrast (unlabeled)
Findings: CT Chest with contrast (labeled)
Diagnostic workup

- Diagnostic Imaging: CT demonstrated a heterogeneously enhancing mass in the right upper lobe (RUL), likely endobronchial in origin with possible invasion of the thymus.

- DDx: carcinoid tumor, mucoepidermoid tumor, pleuropulmonary blastoma, anterior mediastinal masses (germ cell tumor and lymphoma).

- Final Pathology: Bronchoscopy with biopsy of the RUL mass showed pathology consistent with a low-grade mucoepidermoid tumor.

- Resection: Da Vinci Thoracoscopy with Right Upper Lobectomy and Regional Lymphadenectomy excised the 7.2 x 4.7 x 3.5cm tumor with negative margin, final staging T4N0.
Final Diagnosis:

Pediatric Mucoepidermoid Carcinoma (MEC)
Case Discussion:
Pediatric Mucoepidermoid Carcinoma (MEC)

• Rare malignant tumor arising from the bronchial gland, more commonly seen arising from nearly identical glandular tissue in the salivary gland.

• Incidence of 0.1-0.2% of all lung cancers, but 10% of malignant lung tumors in children.

• These carcinomas usually present as an intraluminal mass, producing luminal occlusion with obstructive symptoms.

• Early diagnosis can be accomplished if the clinician is alert to persistent pneumonia.
Case Discussion:
Pediatric Mucoepidermoid Carcinoma (MEC)

• CT is the initial test of choice prior to bronchoscopy and biopsy, which are invasive and can cause bleeding.

• On biopsy, mucoepidermoid carcinoma appears, macroscopically, as an exophytic intrabronchial mass and microscopically, as glandular tissue in the submucosa of the large bronchi.

• In children, mucoepidermoid tumors should be considered potentially malignant, but are overwhelmingly low-grade, carrying an excellent prognosis with complete resection by means of lobectomy.
References


