AMSER Case of the Month August 2022

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

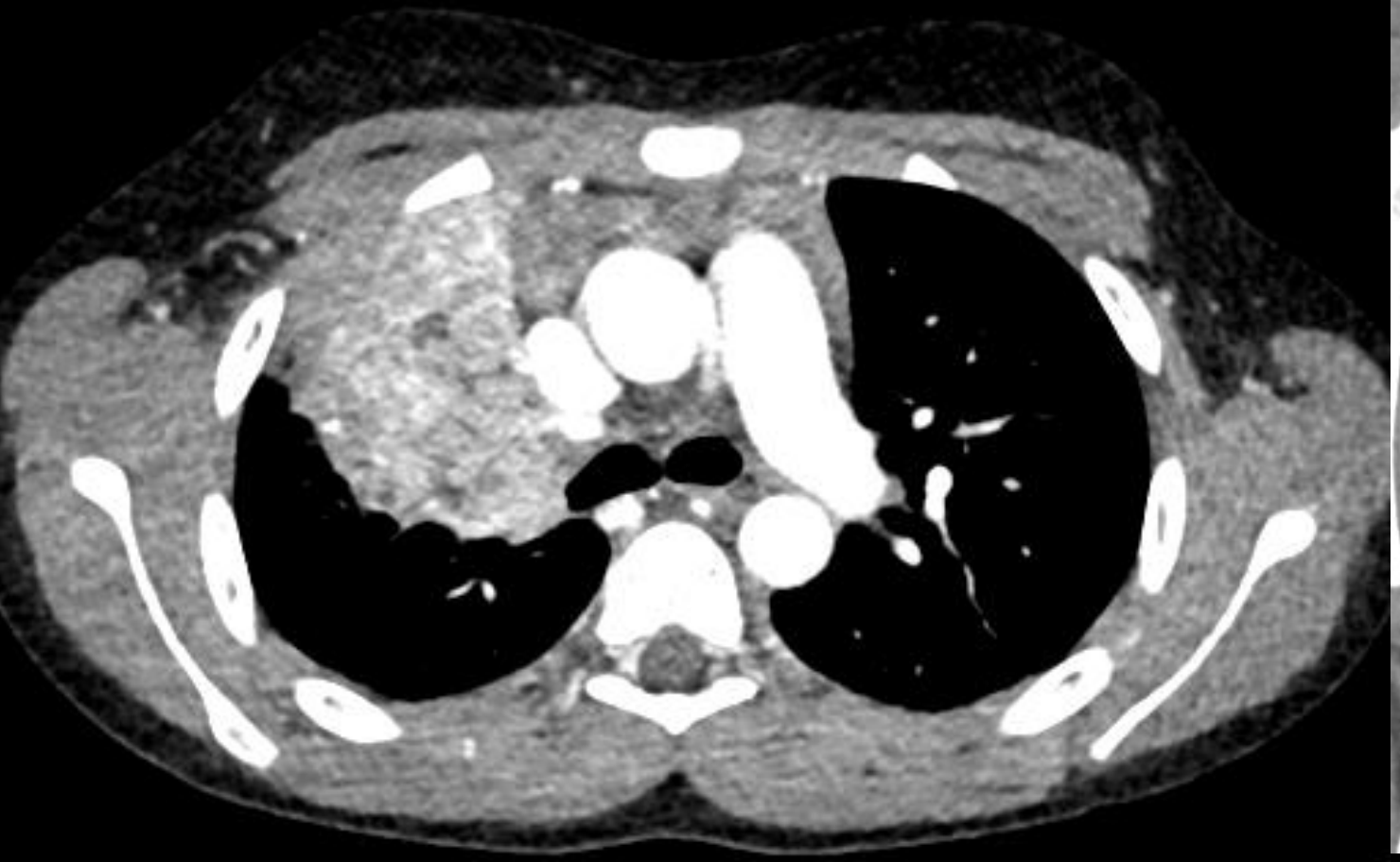
What Imaging Should We Order?

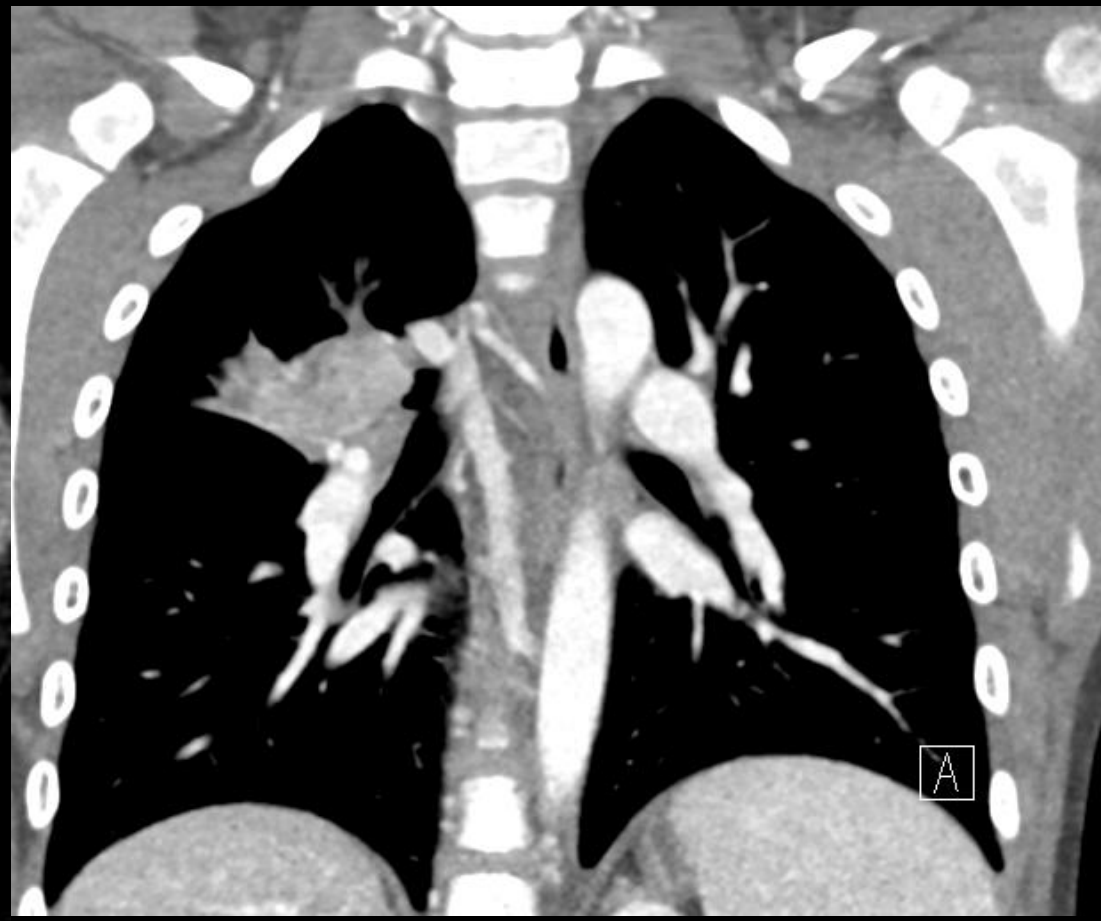
ACR Appropriateness Criteria

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

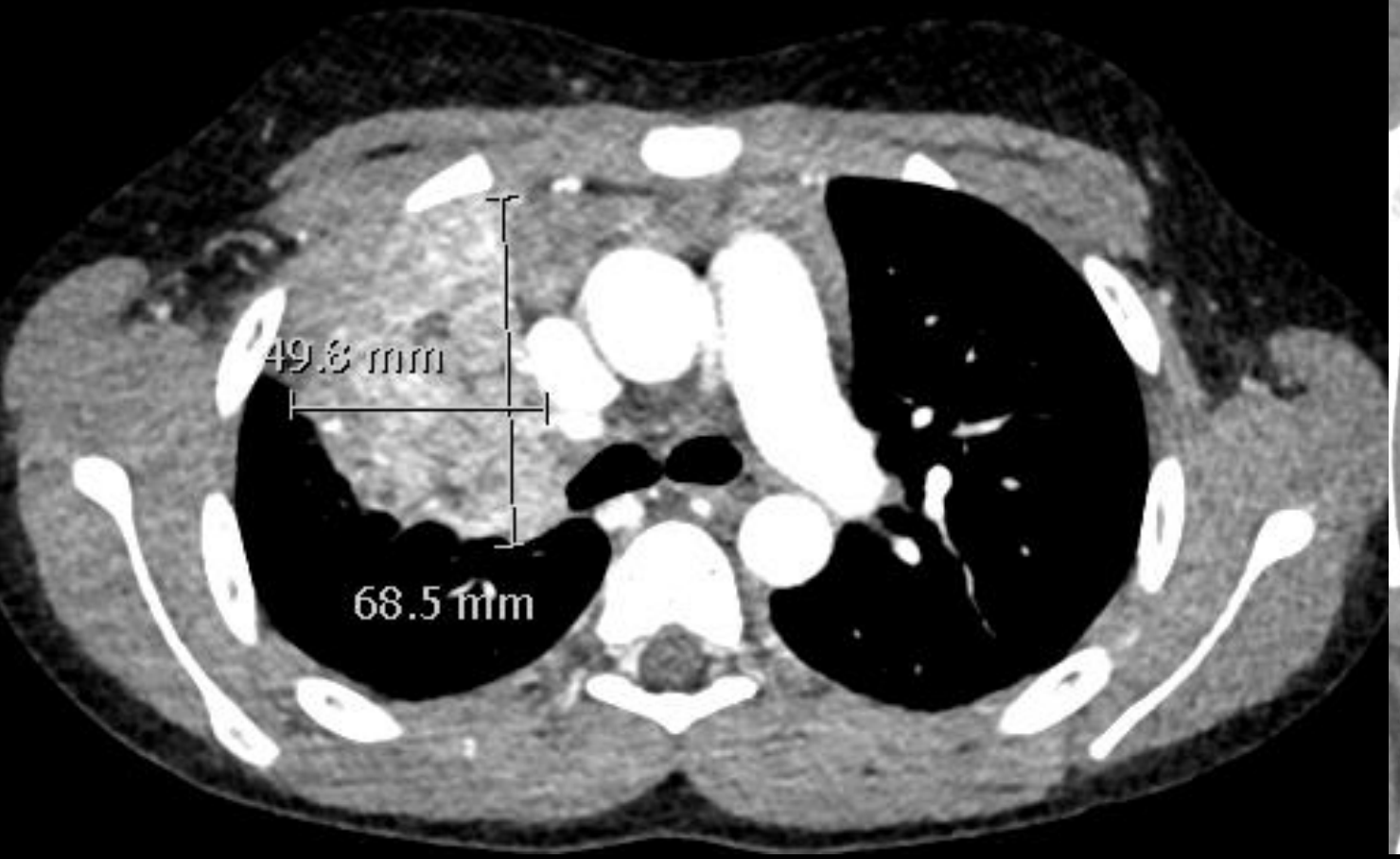
Procedure	Appropriateness Category	Relative Radiation Level
CTA chest with IV contrast	Usually Appropriate	
CT chest with IV contrast	Usually Appropriate	☢☢☢☢
CT chest without IV contrast	May Be Appropriate (Disagreement)	☢☢☢☢
MRI chest without and with IV contrast	Usually Not Appropriate	O
CT chest without and with IV contrast	Usually Not Appropriate	☢☢☢☢
MRI chest without IV contrast	Usually Not Appropriate	O
US chest	Usually Not Appropriate	O

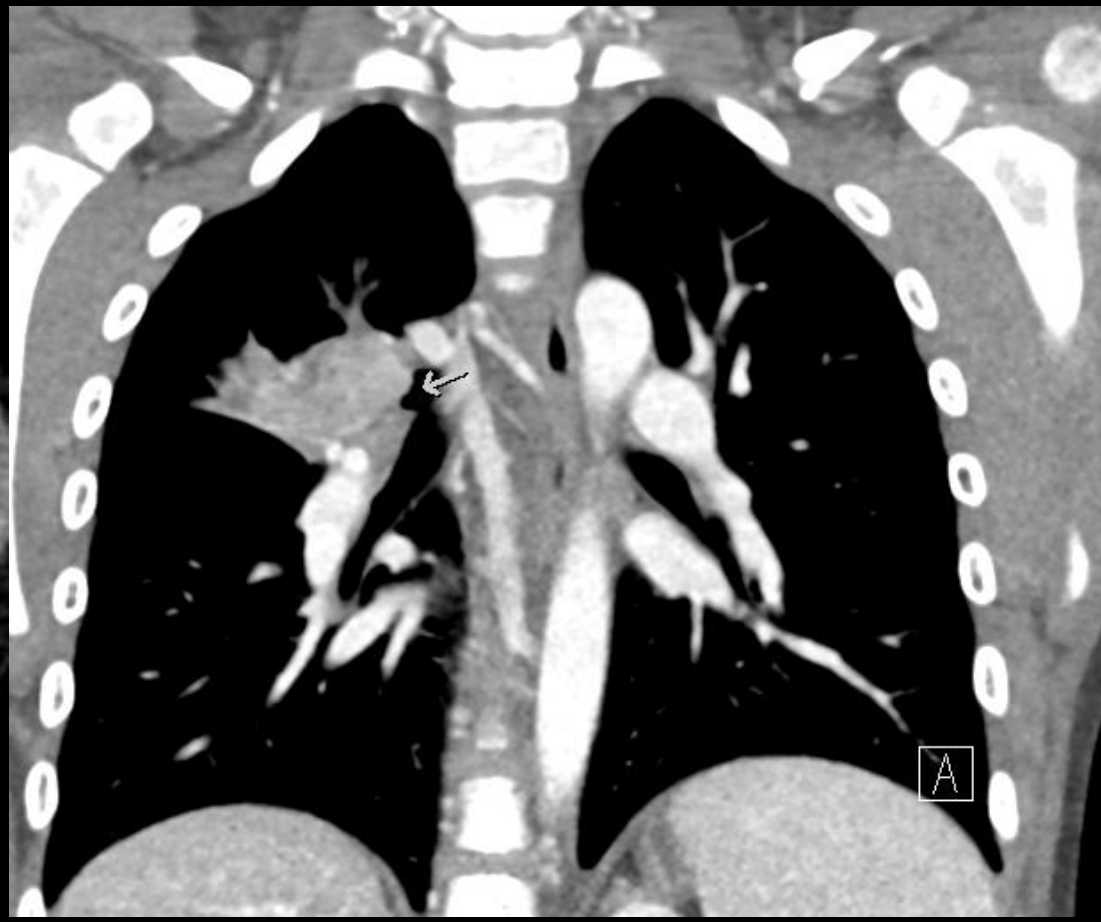
Findings: CT Chest with contrast (unlabeled)





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

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