Approach to Diagnosis of Pleural Effusion

**INITIAL EVALUATION**

**Patient with confirmed pleural effusion**

- History and physical

  - Prior thoracentesis performed?  
    - No
    - Yes: Etiology of pleural effusion determined?

  - Yes: New diagnostic thoracentesis or Refer to Box A, if another thoracentesis is not clinically indicated

  - No: Chest x-ray (PA/lateral) and ultrasound of the affected hemithorax and Consider CT chest with/without contrast to evaluate for pleural disease and loculations

- Is thoracentesis feasible?

  - No
  - Yes: Perform thoracentesis and send pleural fluid for:
    - Cell count and differential
    - Total protein
    - LDH
    - Hematocrit
    - Glucose
    - Triglycerides
    - Cytology
    - Amylase
    - Gram stain and culture
    - AFB stain and culture
    - Cholesterol
    - Anaerobic culture
    - pH

**No**

- Coordinate follow-up with primary service for treatment disposition and/or additional diagnostic work up

  - If needed, refer to Management of Malignant Pleural Effusion algorithm

  - Follow up within 2 weeks with chest x-ray (PA/lateral) and clinical evaluation

**A**

- Consider:
  - CT chest pulmonary embolism protocol and/or
  - Echocardiogram and/or
  - Pleural biopsy

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1 Safety of procedure is deferred to the clinician and is based on hematologic parameters, medications (anticoagulants, antiplatelets), hemodynamic stability and clinical scenario

2 If pleural effusion is blood-tinged or serosanguinous, add hematocrit and triglycerides. If pleural fluid is milky or there is clinical suspicion of chylothorax, add triglycerides.

3 If clinically indicated

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Department of Clinical Effectiveness V5
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SUGGESTED READINGS


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Disclaimer: This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care.

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