Approach to Diagnosis of Pleural Effusion

INITIAL EVALUATION

Patient with confirmed pleural effusion

History and physical

- Chest x-ray (PA/lateral) and ultrasound of the affected hemithorax
- Consider CT chest with/without contrast to evaluate for pleural disease and loculations

Is thoracentesis feasible?

Perform thoracentesis and send pleural fluid for:

- Cell count and differential
- Total protein
- Hematocrit
- LDH
- Glucose
- Cytology
- Gram stain and culture
- AFB stain and culture
- Cholesterol
- Anaerobic culture
- Albumin
- Fungal stain and culture
- pH

Consider:

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

Etiology of pleural effusion determined?

- Coordinate follow-up with primary service for treatment disposition and/or additional diagnostic work up
- If needed, refer to Management of Malignant Pleural Effusion - Adult algorithm
- Follow up within 2 weeks with chest x-ray (PA/lateral) and clinical evaluation

Yes

No

Prior thoracentesis performed?

No

Yes

Etiology of pleural effusion determined?

No

Yes

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

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

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

Hemothorax is diagnosed if ratio of pleural fluid red blood cells (per micro liter) to peripheral red blood cell count (per micro liter) ≥ 50%

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

3 Hemothorax is diagnosed if ratio of pleural fluid red blood cells (per micro liter) to peripheral red blood cell count (per micro liter) ≥ 50%

4 If clinically indicated

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.
SUGGESTED READINGS


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DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Pleural Effusion Work Group experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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