THORACENTESIS

Thoracentesis is a bedside procedure involving the withdrawal of fluid from the pleural cavity. Pleural effusions are associated with several disease processes in hospitalized patients and may be evaluated using thoracentesis. The Healthcare Cost and Utilization Project (HCUP) estimates almost 189,000 thoracenteses were performed in hospitalized patients in 2002, although this total includes chest tube placement as well. Using the history, physical examination and radiographic findings, hospitalists identify those patients who would benefit from diagnostic or therapeutic thoracentesis.

KNOWLEDGE

Hospitalists should be able to:
- Describe the normal anatomy of the chest wall, thorax and lung.
- Define and differentiate the disease processes that may lead to the development of pleural effusion.
- Define and differentiate transudative and exudative pleural effusions and their causes.
- Explain indications and contraindications of thoracentesis and its potential risks and complications.
- Explain the role of chest imaging in the evaluation of pleural effusion.
- Explain the appropriate diagnostic testing for pleural fluid.
- Describe indications for use of ultrasonography or computed tomography to assess the quantity of pleural fluid and/or guide thoracentesis.
- Select the necessary equipment to perform a thoracentesis at the bedside, and differentiate what is needed for diagnostic versus therapeutic thoracentesis.
- Define the criteria that distinguish transudative and exudative effusions.
- Describe the effects of various disease processes on pleural fluid results.

SKILLS

Hospitalists should be able to:
- Elicit a thorough history, identifying potential disease processes and risk factors for the development of pleural effusions.
- Perform a chest examination, including specific maneuvers to assess for the presence of pleural effusion.
- Properly position the patient and identify anatomic landmarks to perform a thoracentesis.
- Use sterile techniques during preparation for and performance of thoracentesis.
- Maintain clinician safety with appropriate protective wear.
- Recognize and manage complications associated with thoracentesis, especially pneumothorax and re-expansion pulmonary edema.
- Order and interpret the results of pleural fluid analysis.
- Order and interpret platelet and coagulation studies when indicated.
- Determine need for chest tube placement based on thoracentesis results.
- Synthesize a management plan based on history, physical examination, radiographic imaging and results of pleural fluid analysis.
- Identify patients with pleural effusions who may benefit from therapeutic thoracentesis, chest tube placement and/or pleurodesis.

ATTITUDES

Hospitalists should be able to:
- Communicate with patients and families to explain the procedure, its expected diagnostic or therapeutic benefits, and potential complications; and to obtain informed consent.
- Order and promptly review the results of routine post-procedure chest radiographs.
- Manage patient discomfort or pain during and after the procedure.
- Recognize indications for specialty consultations, which may include interventional radiology, pulmonary medicine, infectious disease, or cardiothoracic surgery.

SYSTEM ORGANIZATION AND IMPROVEMENT

To improve efficiency and quality within their organizations, Hospitalists should:
- Lead, coordinate or participate in multidisciplinary initiatives to promote patient safety and optimize resource utilization.
- Collaborate with radiologists to standardize identification of patients who would benefit from ultrasound-guided thoracentesis.
- Lead, coordinate or participate in efforts to develop strategies to minimize institution complication rates.
- Lead, coordinate or participate in quality improvement programs to monitor hospitalists' performance and/or supervision of thoracentesis.
- Lead, coordinate or participate in efforts to organize and consolidate thoracentesis equipment in an identifiable location in the hospital, easily accessible to clinicians who perform the procedure.