A large pleural effusion compresses adjacent lung tissue. This causes the characteristic manifestation of dyspnea. Pain may develop, although with inflammatory processes pleuritic pain often is relieved by formation of an effusion. Breath sounds are diminished or absent, and a dull percussion tone is heard over the affected area. Chest wall movement may be limited.

**COLLABORATIVE CARE**

Chest X-ray often provides the first evidence of a pleural effusion. Because fluid typically collects in dependent regions, it is seen at the base of the affected lung on an upright chest X-ray, and along the lateral wall when the client is positioned on the affected side. CT scans and ultrasonography also are used to localize and differentiate pleural effusions.

If the cause of pleural effusion is not apparent, a thoracentesis is done. **Thoracentesis** is an invasive procedure in which fluid (or occasionally air) is removed from the pleural space with a needle. Aspirated fluid is analyzed for appearance, cell counts, protein and glucose content, the presence of enzymes such as LDH and amylase, abnormal cells, and culture.

When pleural effusion is significant and interferes with respirations, thoracentesis is the treatment of choice to remove the fluid (Figure 36–15). Thoracentesis may be performed at the bedside, in a procedure room, or in an outpatient setting. Local anesthesia is used, and the procedure requires less than 30 minutes to complete. Percussion, auscultation, radiography, or ultrasonography are used to locate the effusion and needle insertion site. The amount of fluid removed is limited to 1200 to 1500 mL at one time to reduce the risk of cardiovascular collapse from rapid removal of too much fluid. Pneumothorax is a possible complication of thoracentesis if the visceral pleura is punctured or a closed drainage system not maintained during the procedure. Nursing care for the client undergoing a thoracentesis is outlined in the box below.

**NURSING CARE OF THE CLIENT HAVING A THORACENTESIS**

**PREPROCEDURE CARE**

- Verify a signed informed consent for the procedure. *This invasive procedure requires informed consent.*
- Assess knowledge and understanding of the procedure and its purpose; provide additional information as needed. *An informed client will be less apprehensive and more able to cooperate during the thoracentesis.*
- Preprocedure fasting or sedation is not required. Only local anesthesia is used in this procedure, and the gag and cough reflexes remain intact.
- Administer a cough suppressant if indicated. *Movement and coughing during the procedure may cause inadvertent damage to the lung or pleura.*
- Obtain a thoracentesis tray, sterile gloves, injectable lidocaine, povidone-iodine, dressing supplies, and an extra overbed table or mayo stand. *These supplies are used by the physician performing the procedure.*
- Position the client upright, leaning forward with arms and head supported on an anchored overbed table. *This position spreads the ribs, enlarging the intercostal space for needle insertion.*
- Inform the client that although local anesthesia prevents pain as the needle is inserted, a sensation of pressure may be felt. *A pressure sensation occurs as the needle punctures the parietal pleura to enter the pleural space.*

**POSTPROCEDURE CARE**

- Monitor pulse, color, oxygen saturation, and other signs during thoracentesis. *These are indicators of physiologic tolerance of the procedure.*
- Apply a dressing over the puncture site, and position on the unaffected side for 1 hour. *This allows the pleural puncture to heal.*
- Label obtained specimen with name, date, source, and diagnosis; send specimen to the laboratory for analysis. Fluid obtained during thoracentesis may be examined for abnormal cells, bacteria, and other substances to determine the cause of the pleural effusion.
- During the first several hours after thoracentesis, frequently assess and document vital signs; oxygen saturation; respiratory status, including, respiratory excursion, lung sounds, cough, or hemoptysis; and puncture site for bleeding or crepitation. *Frequent assessment is important to detect possible complications of thoracentesis, such as pneumothorax.*
- Obtain a chest X-ray. *Chest X-ray is ordered to detect possible pneumothorax.*
- Normal activities generally can be resumed after 1 hour if no evidence of pneumothorax or other complication is present. *The puncture wound of thoracentesis heals rapidly.*