

Pneumothorax

Pneumothorax occurs when there is an accumulation of air in the pleural space; this air increases intrapleural pressure, making it more difficult to expand the affected lung. This leads to the clinical manifestations of dyspnea, chest pain and often back pain, labored respirations, tachycardia, and decreased oxygen saturation (SaO_2). In neonates and infants on mechanical ventilation, the first clinical signs of a pneumothorax are oxygen desaturation and hypotension. The three major types of pneumothorax are tension, spontaneous, and traumatic. The definitive diagnosis of pneumothorax is a chest radiograph. The emergent treatment involves needle aspiration of the air within the pleural space; subsequently a chest tube to closed drainage is usually inserted to prevent the reaccumulation of air. *Pleural effusion* occurs when there is an excessive accumulation of fluid in the pleural space. The diagnosis is made by chest radiography, and the treatment involves evacuation of the fluid by needle aspiration followed by insertion of a chest tube to closed drainage.

Continuous closed chest drainage may be instituted when purulent fluid is aspirated. If a large amount of purulent drainage is obtained, an appropriate antibiotic may be instilled into the chest cavity, and chest drainage is discontinued for approximately 1 hour after the instillation. Closed drainage via a chest tube is continued until drainage fluid is minimal, which rarely requires more than 5 to 7 days. Sometimes repeated pleural taps are sufficient to remove fluid; however, if the purulent drainage accumulates rapidly and is highly viscous, continuous drainage is preferred. Rarely, thoracotomy with open debridement of the infected lung tissue may be required. If empyema and pneumothorax tend to recur, a partial thoracoscopic lobectomy may be performed. Alternatively, video-assisted thoracoscopy (VATS) and intrapleural fibrinolytic therapy may preclude the use of open debridement and thoracotomy (Winnie and Lossef, 2016).

Nursing Care Management

Nursing care of the child with pneumonia is primarily supportive and symptomatic but necessitates thorough respiratory assessment