



## Intensive Care Pneumothorax in Ventilated Neonates

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### DESCRIPTION

Pneumothorax is more common in newborns than in any other age group and is linked to higher death and morbidity rates. It starts with an overextended alveoli rupturing. Pneumothorax and the less common air leak syndromes of pneumomediastinum, pneumopericardium, subcutaneous emphysema, and pneumoperitoneum are all caused by the air leaking out along the perivascular connective tissue sheath into the pleural space. In the Neonatal Intensive Care Unit (NICU), pneumothorax is a serious condition that occurs very frequently. About 0.05% to 0.1% of live births result in symptomatic pneumothorax, and in very low birth weight infants, this rate can reach 3.8% to 9%. There are a number of risk factors for pneumothorax that have been identified, including chorioamnionitis, Respiratory Distress Syndrome (RDS), immaturity, and invasive and non-invasive respiratory assistance. Neonatal pneumothorax treatment is not completely understood. In NICUs, there are three methods that are frequently used. Chest tube implantation is a typical therapeutic strategy for hypertensive pneumothoraces. The objective of this study was to assess the prevalence of newborn infants with pneumothorax, identify risk factors, characterize clinical characteristics, care, and outcomes, and find predictive factors of mortality in these neonates.

Sometimes a newborn's pneumothorax doesn't show any signs. On the other hand, it might be the reason for a newborn's quick breathing. Additionally, newborns may grunt when breathing out and have bluer skin or lips (cyanosis). The damaged side's chest can occasionally be more pronounced than the unaffected side. When newborns with underlying lung abnormalities, newborns using CPAP, newborns on a ventilator, or both experience worsening breathing problems (respiratory distress), a drop in blood pressure, or both, pneumothorax is suspected.

Doctors may hear lessened sounds of air entering and exiting the lung on the side of the pneumothorax when evaluating these neonates.

In a dimly lit environment, doctors will occasionally examine premature newborns by shining a fiber-optic light through the affected side of the baby's chest (transillumination). This operation is carried out to demonstrate the presence of free air around the lungs (pleural cavity). The diagnosis of a neonate with a pneumothorax is confirmed by a chest x-ray. Full-term infants with minor symptoms may be placed in an oxygen hood, a small tent into which oxygen is pumped, or they may be given oxygen through a two-pronged tube inserted in their nostrils, allowing them to breathe air that is higher in oxygen than the air in the room. Usually, the supplied oxygen is sufficient to keep the blood's oxygen levels at a healthy level. However, air must be quickly expelled from the chest cavity if the infant's breathing is difficult, the level of oxygen in the blood drops, and especially if the circulation of blood is compromised. The chest cavity is evacuated of air using a needle and syringe. Doctors may need to insert a plastic tube into the chest cavity of newborns that are experiencing severe respiratory distress, are getting CPAP, or are being supported by a ventilator in order to continually suction and remove air from the chest cavity. After a few days, the tube can typically be removed.

Still today, pneumothorax is linked to high mortality and morbidity. The need for mechanical ventilation and mortality are linked to VLBW and preterm in newborn pneumothorax. The infant's colour, heart rate, respiration rate, blood pressure, and oxygenation should all be monitored even if a pneumothorax only results in mild symptoms. The air in the pleural cavity needs to be evacuated if there is obvious significant respiratory distress. The management of TT using tiny bore chest drains is secure and productive.

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