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Case Report

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Spontaneous pneumothorax in a newborn case report: original image, treatment process and follow-up

Abstract

Pneumothorax is a condition where there is free air between the parietal and visceral pleural leaves within the thoracic cavity. She was born with a cesarean section of 2780grams in 38th gestational week. As the patient had tachypnea and intercostal retractions, he was hospitalized in another hospital and started treatment. On the second day of hospitalization, pneumothorax was seen on the posterior anterior chest radiograph and he was referred to us. When the patient came to our clinic, his general condition was poor, tachypnea, intercostal withdrawal and groan breathing were present. When the patient had low saturation, he was intubated and connected to a mechanical ventilator. The chest tube was placement and free drainage was performed. She was discharged on the 9th day of his hospitalization because of his good general condition, improved laboratory findings and no additional difficulties. Spontaneous pneumothorax should be considered in the presence of sudden respiratory distress in the newborn period. Patients diagnosed with pneumothorax should be immediately chest tube placement, patients with respiratory distress should be evaluated and given supportive treatment.

Keywords: spontaneous pneumothorax, respiratory distress, newborn

Volume 7 Issue 1 - 2020

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Received: December 06, 2019 | **Published:** January 02, 2020

Introduction

Pneumothorax is a condition where there is free air between the parietal and visceral pleural leaves within the thoracic cavity. Develops most commanly in the neonatal period during childhood. It is a problem that requires urgent intervention. Symptomatic pneumothorax is reported in 0.08% of all live births. It is reported to be 1-2% in newborns, 5-7% in those with birth weight below 1500g, but 30% in patients with an underlying lung problem and in need of mechanical ventilation. Pneumothorax, which is commonly encountered in neonatal intensive care units, causes high mortality and morbidity especially in premature infants. Early diagnosis and appropriate treatment are important to reduce complications and mortality.[1–4] In this case report, chest radiography, treatment and follow-up process of a newborn who was diagnosed as spontaneous pneumothorax were shared.

Case report

She was born with a cesarean section of 2780grams at 38th gestational week from a 40-year-old mother. As the patient had tachypnea and intercostal retractions, he was hospitalized in another hospital and started treatment. On the second day of hospitalization, pneumothorax was seen on the posterior anterior chest radiograph and he was referred to us. When the patient came to our clinic, his general condition was poor, tachypnea, intercostal withdrawal and groan breathing were present. When the patient had low saturation, he was intubated and connected to a mechanical ventilator. Pneumothorax was found on chest X-ray (Figure 1). The chest tube was placement and free drainage was performed. The is Hgb: 15.8g/dL Wbc: 18000, Platelet: 203000, Crp: 0.15mg/dL, Ca: 7.5mg/dL, PH: 7.1, HCO3: 14.8mEq/L and PCO2: 65.7mmHg found. Other values were within normal limits. Ampicillin, Amikacin and Ca lactate treatment was started. On the 6th day of hospitalization, he was extubated because his respiratory status improved and his general condition was good. Thoracic tube was withdrawn upon improvement of chest radiography (Figure 2). She was discharged on the 9th day of his hospitalization because of his good general condition, improved laboratory findings and no additional difficulties.

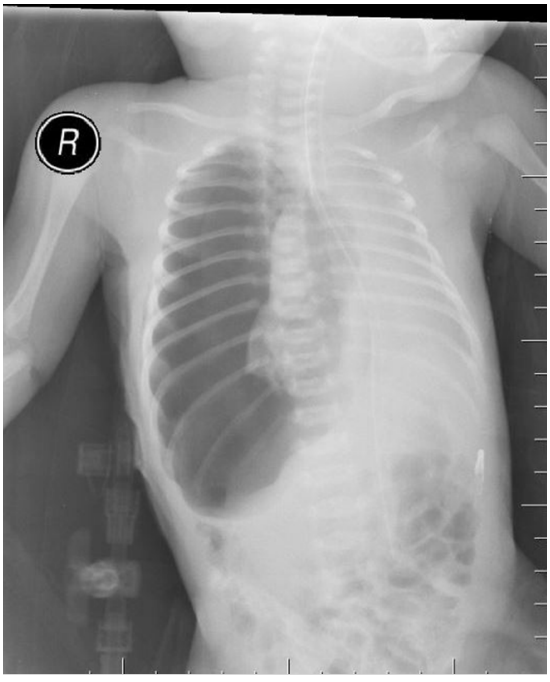

Figure 1 Pneumothorax appearance on first chest X-ray.

Figure 2 Chest X-ray after treatment.

Discussion and conclusion

Pneumothorax in newborns often develops secondary to an underlying lung pathology and mechanical ventilation therapy. Neonatal pneumothorax is more common in premature, postmature and male infants. Mortality is very high when pneumothorax is untreated or delayed treatment.[5] Pneumothorax is most commonly encountered in the first three days. This is probably due to high transpulmonary pressure caused by the onset of new breathing.[6] In our patient, she was born in 38th gestational week and girl gender. Spontaneous pneumothorax developed on the second day.

Pneumothorax may develop spontaneously. However, most infants have an underlying lung pathology. RDS, meconium aspiration syndrome, pulmonary hypoplasia and resuscitation at birth, positive pressure mechanical ventilation are reported as risk factors for pneumothorax and patient prognosis.[7] Our patient had no underlying lung pathology and spontaneous pneumothorax occurred.

Pneumothorax is a life-threatening condition with high mortality. Currently, very high mortality rates (20-60%) are still reported. It is known that prognosis is better in patients without pulmonary parenchymal disease. However, the proportion of these patients is quite low. Mortality is very high especially in preterms whose gestational age is less than 29 weeks. Although there are risk factors that increase mortality in pneumothorax patients such as primary disease, prematurity, mechanical ventilator therapy, mortality can be reduced with early diagnosis and appropriate treatment.[7–10]

Early diagnosis of pneumothorax depends on clinical suspicion. Spontaneous pneumothorax should be kept in mind in the presence of sudden and refractory respiratory distress in the neonatal period. If pneumothorax is suspected, chest radiography should be performed. Patients diagnosed with pneumothorax should be immediately chest tube placement, patients with respiratory distress should be evaluated and given supportive treatment.

Funding

None.

Acknowledgments

None.

Conflicts of interest

Author declares that there is no conflict of interest.

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