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Case Report

Pneumo-Scrotum as Diagnosis of Ectopic Air in Other Locations

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Abstract

A 43-year-old woman presented spontaneous delivery at 35+4 weeks. An unreactive fetus was born in addition to abruptio placentae, joint exit of placenta and fetus and a true cord knot. We proceed to a deep resuscitation. During the ventilation it was observed that the scrotal volume was increased. A X-ray was done confirming ectopic air in chest, peritoneum and scrotum. Pneumo-scrotum is a rare disease that has been described in immature newborns. It has been reported secondary as infection, after aggressive resuscitation, as a consequence of mechanical ventilation and secondary to gastric perforations. Its treatment is etiological. The simple thoracic and abdominal radiography are sufficient for diagnosis. In the neonatal period, the presence of pneumo-scrotum during resuscitation may reveal ectopic air in the thorax or peritoneum.

Keywords: *Pneumo-scrotum, ectopic-air, resuscitation.*

Introduction

Pneumo-scrotum is a rare disease that has been described in immature newborns. It has been reported secondary as infection, after aggressive resuscitation, as a consequence of mechanical ventilation and secondary to gastric perforations. Its treatment is etiological. [1-2]

Case Report

A 43-year-old woman presented premature rupture of membranes leading to spontaneous delivery at 35+4 weeks. Prior to delivery, an altered tocographic record was observed (variable decelerations).

An unreactive fetus was born, without respiratory effort, with extreme bradycardia and poor perfusion, in addition to abruptio placentae, joint exit of placenta and fetus and a true cord knot.

It was decided to intubate the newborn and at 30 seconds of life, the newborn presented poor perfusion, extreme bradycardia, arreactivity and absence of reflexes and respiratory movements. Therefore, we proceed to a deep resuscitation and cardiac massage, drugs as adrenaline (two doses intratracheal and three intravenous), bicarbonate (two intravenous doses) and expansion with intravenous physiological saline serum (for 2 times) were needed.

During the ventilation it was observed that the scrotal volume was increased, probably because of ectopic air. We proceeded to puncture in the middle clavicular line in the second intercostal space of both hemithorax but the bubbling of air in the seal under the water was not observed. A nasogastric tube was placed for gastric air extraction but no air was extracted. Once these procedures were performed, an X-ray was done confirming ectopic air in chest, peritoneum and scrotum (**Figure 1**). During resuscitation, several thoracic punctures were performed and were effective in draining the ectopic air, but even so, after 35 minutes with asystole and absence of respiratory effort, it was decided to suspend the resuscitation.

Figure 1. *X-Ray confirming ectopic air in chest, peritoneum and scrotum.*

Discussion and Conclusion

Pneumo-scrotum is a rare disease that can be a symptom of a life-threatening pathology. It is defined as the presence of gas within the content of the scrotal pouch. It has been reported secondary as infection, perforation of the ileum secondary to atresia, after aggressive resuscitation, as a consequence of mechanical ventilation and secondary to gastric perforations [1-4]. Its treatment is etiological. There are several theories that explain the pathophysiological mechanism of the pneumo-scrotum [5]: 1st, the alveolar rupture allows the passage of air through the vascular pulmonary fascias, passing to the mediastinum and from there, through the subcutaneous cellular tissue, reaching the abdomen and scrotum. 2nd, the air dissects a plane deeper than the subcutaneous tissue, the escarpment fascia. 3rd, the passage of air through the diagrammatic hiatus, until reaching the pararenal space and, through the retroperitoneum, the inguinal canal to the spermatic fascia to the scrotum. Most cases are related to diagnostic or therapeutic procedures, such as colonoscopy. The simple thoracic and abdominal radiography, such as CT of the pelvis, abdomen and thorax are sufficient for diagnosis.

In the neonatal period, the presence of pneumo-scrotum during resuscitation may reveal ectopic air in the thorax or peritoneum, allowing a priority problem to be solved without waiting for the result of the chest X-ray.

Neither the duration nor the intensity of a sentinel hypoxic event correlates with the need for resuscitation, with the sequelae or with intrauterine death, which is what happened to this patient. The mechanism of adaptation of the newborn are prepared to endure periods of hypoxia but if they are intense or lasting in time they can exhaust these mechanisms and that it passes from primary to secondary apnea and therefore sequelae or even death. The sentinel hypoxic event in this case, abruptio placentae, was so intense that all resuscitation attempts were futile despite the identification and treatment of reversible causes of cardiorespiratory arrest such as pneumothorax.

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Conflict of Interest

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Contributors' Statement

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