Pneumopericardium resulting in pneumoperitoneum in a newborn with congenital diaphragmatic hernia

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ABSTRACT

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CASE REPORT

A five-day old girl presented with a pneumopericardium discovered fortuitously on a radiograph (Figure 1). She was born at term with a prenatal diagnosis of right-sided congenital diaphragmatic hernia (CDH) and required high frequency ventilation and inotrope/pressor therapy since birth. On day-6 the pneumopericardium increased and a pneumomediastinum was noted (Figure 2). The newborn remained stable without signs of cardiac tamponade. On day-7, the pneumopericardium/mediastinum resolved and a pneumoperitoneum appeared (Figure 3). The condition of the child improved at the same time and it was possible to gradually diminish ventilation pressures and discontinue inotrope/pressor therapy. No intestinal perforation was noted during surgery a few hours later.

Figure 1: X-ray at day-5. Pneumopericardium

Figure 2: X-ray at day-6. Pneumopericardium increased and apparition of pneumomediastinum.

DISCUSSION

Neonatal pneumopericardium is a rare condition in the neonate, usually caused by mechanical ventilation [1]. The only previously reported association of pneumopericardium with pneumomediastinum and pneumoperitoneum was in a 77-year-old patient who received artificial ventilation following blunt chest

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Author Contributions

Thomas Pennaforte – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Antoine Payot – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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Figure 3: X-ray at day-7. Pneumopericardium and pneumomediastinum resolution and apparition of pneumoperitoneum.

trauma [2]. We believe that the air in the pericardial space dissected into the thoracoabdominal peritoneal cavity leading to hemodynamic and respiratory improvement in this newborn with CDH.

CONCLUSION

This is the first case of a newborn with CDH presenting with pneumopericardium resulting in pneumoperitoneum and improvement of respiratory and hemodynamic functions before surgery.

Keywords: Congenital diaphragmatic hernia (CDH), Pneumopericardium, Pneumomediastinum

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