Cerebral air embolism in a neonate following cardiopulmonary resuscitation

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A preterm infant with a history of infant respiratory distress syndrome requiring surfactant administration and mechanical ventilation experienced sudden cardiac arrest 5 days after extubation. Cardiopulmonary resuscitation (CPR) was started, but without success. Head CT revealed extensive intracranial and extracranial intravascular air (Fig. 1), confirmed at post-mortem examination. The cardiac arrest was attributed to an occluding thrombus in the inferior vena cava.

Two conditions must be present for air embolism to occur: direct communication between a source of air and the vasculature, and a pressure gradient. The clinical course, post-mortem findings and analysis of the infusion chart excluded gas-producing infection, necrotizing enterocolitis and iatrogenic air infusion as likely causes of the air-embolism. We postulate that the site of air entry was the lung and the pressure gradient needed for air embolism to occur was related to CPR.

Fig. 1 Head CT

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