Massive Air Embolism in a Neonate with Pulmonary Hypoplasia

A baby girl was born weighing 2.5 kg at 31 weeks’ gestation to a 31-year-old woman (gravida 2, para 1). Hydrops fetalis had been diagnosed at 28 weeks’ gestation, with subsequent positive parvovirus titers. The baby’s Apgar score was 7 and 9 at one and five minutes, respectively, and a left pneumohydrothorax and marked pulmonary hypoplasia were present. Progressive respiratory distress was treated with mechanical ventilation, the insertion of two chest tubes, and nitric oxide. Her clinical condition deteriorated, and high-frequency oscillatory ventilation was instituted. When she was 16 hours of age, her intraarterial blood-pressure waveform abruptly dampened and bradycardia developed, with a widened QRS complex. Immediate surgical exploration, as a preliminary to the insertion of a cannula for extracorporeal membrane oxygenation, revealed a gush of air but no blood return from the carotid artery and the internal jugular vein. A chest radiograph obtained just before the surgery revealed air in the major vessels of the neck (arrows), heart chambers, and upper abdomen. Postmortem examination did not reveal the cause of this massive, fatal air embolism.

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