

# Rapid Recovery Hyperbarics

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## The use of HBOT after AGE on a 12 day old infant Gas embolus and cardiac arrest during laparoscopic pyloromyotomy in an infant

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### Abstract:

**PURPOSE:** High volume tubing is used to deliver carbon dioxide during laparoscopic procedures. Failure to prime the tubing with carbon dioxide prior to abdominal insufflation may result in the delivery of nitrogen-containing air to the abdominal cavity. We report a case in which initial insufflation of laparoscopic gas resulted in immediate cardiovascular collapse requiring prolonged resuscitation. Persistent intracranial emboli following the arrest may have resulted from nitrogen contamination of the delivered gas. **CLINICAL FEATURES:** A 12-day-old female underwent laparoscopy for pyloric stenosis. During initial insufflation of the abdomen, the patient had an abrupt decrease in end-tidal carbon dioxide (CO<sub>2</sub>ET) associated with bradycardia and pulseless electrical activity. Three hours after successful resuscitation and open pyloromyotomy, computerized tomography documented **intra-arterial gas within the cerebral and hepatic circulations that resolved following hyperbaric oxygen therapy.** Magnetic resonance imaging five days later revealed watershed infarcts in the right frontal and parietal regions. Nitrogen, an insoluble gas not easily eliminated from the body, was likely the gas present within the patient's circulation several hours after the event. It was unlikely carbon dioxide, which is a highly soluble gas that binds to hemoglobin and is rapidly buffered by the carbonic anhydrase system and excreted by the lung. Room air contamination of high volume insufflation tubing allows nitrogen to enter body cavities during endoscopic procedures. **CONCLUSION:** Persistence of emboli following endoscopic procedures suggests that the entrained gas is insoluble. Room air contamination increases the potential for catastrophic events during laparoscopy and other endoscopic procedures.

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