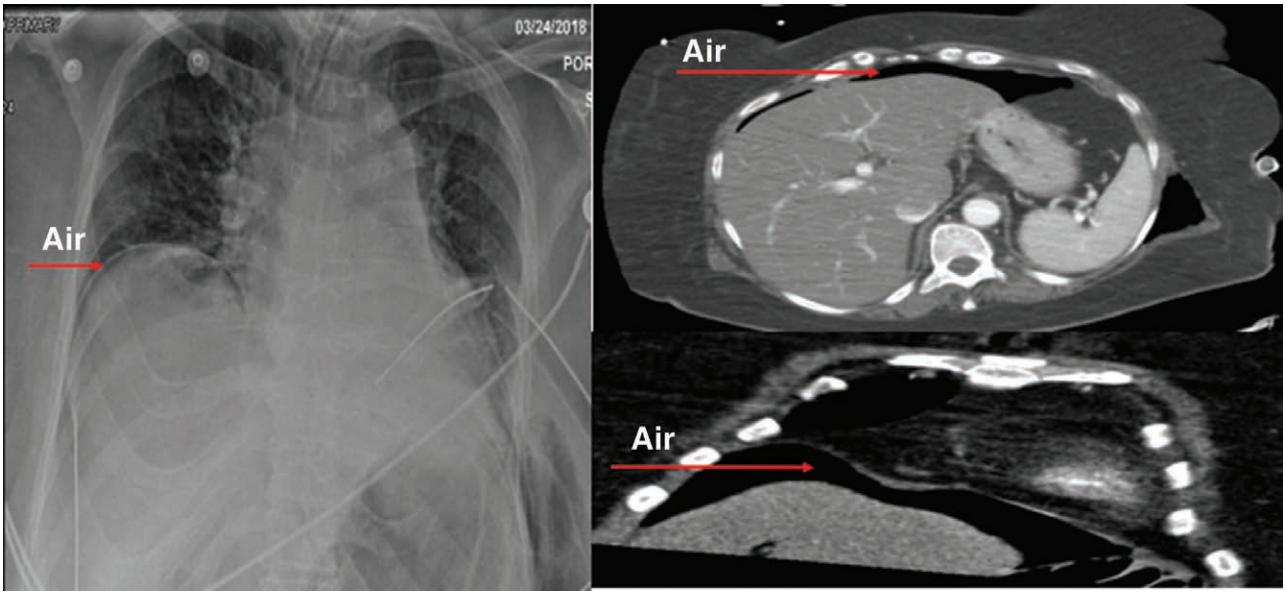
Pneumoperitoneum after Cardiopulmonary Resuscitation

Tanya Keverian, M.D., Somnath Bose, M.D.



A 71-yr-old female with a complicated medical history, most notable for laryngeal stenosis, was transferred from an outside hospital after an emergent cricothyroidotomy during cardiopulmonary resuscitation. Upon her arrival to our hospital, a chest tube was inserted for suspected tension pneumothorax in the setting of hemodynamic instability. Chest x-ray film demonstrated free air under right hemidiaphragm (red arrow in left panel). Follow-up axial and coronal cuts of computed tomography of the chest and abdomen revealed moderate-sized pneumoperitoneum (red arrows in right panel) without any obvious abdominal visceral injury. Pneumoperitoneum is a rare complication of cardiopulmonary resuscitation. Common causes include pneumothorax, tracheobronchial disruption, and perforation of esophagus, stomach, or duodenum.[1] The combination of chest compression and positive pressure ventilation could lead to esophageal tears, iatrogenic pneumothoraces, or tracheobronchial disruption, which may cause air to track from the thoracic cavity to abdomen *via* diaphragmatic apertures.[2] Positive pressure ventilation or incorrect hand positioning during chest compression could potentially lead to gastric distension and rupture. Demonstration of pneumoperitoneum should prompt imaging to rule out injury to intrathoracic and intraabdominal organs. Esophagogram should be ordered, along with computed tomography of the neck, thorax, and abdomen. Bronchoscopy is warranted in suspected airway injury. Expectant management may be pursued in patients with reassuring abdominal examination and negative imaging. Perioperative clinicians should maintain a high index of suspicion for nonsurgical causes of pneumoperitoneum to avoid unnecessary exploratory laparotomy in this critically ill population.[2,3] Our patient had a reassuring abdominal examination and was managed conservatively, and repeat imaging demonstrated resolution of pneumoperitoneum.

Competing Interests

The authors declare no competing interests.

Correspondence

Address correspondence to Dr. Bose: somnathbose@gmail.com

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From the Department of Anesthesia Critical Care and Pain Medicine, Beth Israel Deaconess Medical Center, Boston, Massachusetts.

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