Pneumoscrotum as the Presenting Symptom of Pneumothorax and Pneumoperitoneum after Jet Ventilation

Colin Wilson, M.D.,* Adam Green, M.D., Stephen Bader, M.D., David Graf, M.D.
*Department of Anesthesiology, West Virginia University, Morgantown, West Virginia.
wilsoncol@wvuhealthcare.com

A 46-YR-OLD male presented with pneumoscrotum in postoperative recovery following dilation of tracheal stenosis using carbon dioxide laser and jet ventilation through a catheter. The patient developed stenosis after closure of a tracheostomy, which occurred during recovery from trauma involving vertebral, rib, and pelvic fractures as well as bilateral pneumothoraces. The patient was initially jet-ventilated through a 14 French catheter. After sufficient dilation, this was replaced with a 5.0-mm laser-shielded endotracheal tube, and the patient was ventilated uneventfully for the remainder of the case. The patient was extubated without incident and was recovering comfortably when he complained of scrotal fullness and, in addition to the pneumoscrotum, was found to have a large right pneumothorax and pneumoperitoneum. A chest tube was placed and, 5 days later, the pneumothorax and pneumoscrotum had resolved.

Since 1960, there have been 11 case reports of pneumoscrotum caused by pneumothorax. Pneumoscrotum has a diverse differential diagnosis.1,2 Underlying causes can be categorized by three routes of air entry into the scrotum: 1) dissection of subcutaneous or retroperitoneal air into dartos lining of the scrotal wall; 2) movement of intraperitoneal air through a patent processus vaginalis; and 3) local gas production or introduction because of infection or injection.2,3 The cause in this case was clearly localized high airway pressure from jet ventilation transmitted to the scrotum by the first or second routes above. In this case, the only presenting symptom of life-threatening pathology was the pneumoscrotum.2,3 Although rare in the perioperative setting, the diagnostic implications should be recognized when discovered, and precipitate a prompt search for the cause.

References