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1-1-2023

927: DABBING LUNG INJURY MANAGED BY VV ECMO

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AWAKE VIDEO-ASSISTED THORACIC SURGERY VERSUS STANDARD VATS: COMPARISON OF AIR LEAK RATES/ DURATION

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INTRODUCTION: Air leak after lung surgery is common and can increase chest tube (CT) duration, morbidity/mortality, length of stay (LOS) and costs. Air leaks occur in upwards of 70% of VATS resections and prolonged >3day air leaks (PAL) in upwards of 12%. Resulting prolonged CT duration decreases mobility, increase pain med usage, increase ileus, inhibit deep breaths, increasing atelectasis/pneumonia, increase infection/DVT/PE risk. We compared PAL rates in traditional VATS under general anesthesia vs. AVATS under local with sedation.

METHODS: Over ten years we have performed over 2600 AVATS for a variety of procedures including lobectomy, segmentectomy, decortications, wedges, esophageal repair/ bronchopleural fistula/diaphragm repairs and trauma cases. We compared air leak rates and PAL rate in a subgroup of 762 AVATS lung resections against 268 traditional VATS resections. All cases were performed by same surgeon via 1-2 port technique. CT duration, opioid usage for pain control (usage of IV or oral opioid >2 doses/24 hours) and length of stay data were compared.

RESULTS: Air leak rate (< 3 day) in the 268 traditional VATS resections was 22%, rate of PAL (>3 day) was 6% and two patients developed crepitus requiring reintervention/ added CT placement. Opioid requirement until discharge was seen in 68%. LOS was 2.8 days. One UTI and 1 DVT were seen. Analysis of the 762 AVATS found an air leak rate (< 3 day) of 2% and PAL (>3 day) rate was zero. Opioid usage was limited to 2 doses or less in 98%, also minimizing nausea/confusion. Almost all patients (95%) received IV acetaminophen and IV ketorolac. Average CT duration was 23 hours. Only 8 required CT for 2 days. LOS was 1.2 days. AVATS often performed via single incision with 2-level intercostal block and sedation using dexmedetomidine allowed for arousal of the patient at completion of resection while scope still in chest eliciting a cough to visualize any air leak allowing for repair. Avoiding general anesthesia eliminated cough/bucking on extubation that may strain suture/staple lines. Near complete elimination of air leaks allows 12-french catheter use instead of larger tubes minimizing pain and thus opioid usage. There was no DVT/ PE, stroke, UTI, pneumonia seen.

CONCLUSIONS: AVATS has lower air leak/PAL rates and shorter LOS compared to traditional VATS.

DABBING LUNG INJURY MANAGED BY VV ECMO

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INTRODUCTION: E-cigarette or vaping-associated lung injury (EVALI) is an uncommon complication of e-cigarettes or vaping. Most cases are associated with tetrahydrocannabinol (THC) containing products. "Dabbing" refers to the process of ingesting high concentrations of THC-containing oils or waxes with butane solvents to vaporize cannabinoids for inhalation. Another distinction is the presence of impurities and unpurged butane in the vapors inhaled by the users.

DESCRIPTION: A 29-year-old male presented with cough, dyspnea, and fever seven days prior to admission. He reported smoking marijuana but denied vaping. Initial chest radiograph demonstrated multifocal pneumonia. PCR for SARS-CoV-2 was negative. He required four liters of supplemental oxygen. Physical exam was remarkable for diffuse pulmonary crackles. Broad spectrum antibiotics for pneumonia were initiated. Oxygen requirements rapidly increased, prompting intubation 48 hours from presentation. Ventilator settings escalated to a positive end-expiratory pressure of 18 cm H₂O with 100% FiO₂. Computed tomography angiography ruled out pulmonary embolism, however showed diffuse patchy nodular and confluent opacities. Respiratory cultures grew commensal flora and blood cultures were negative. Comprehensive laboratory investigations for an infectious etiology and autoimmune vasculitis were negative. In further discussion with the patient's wife, he has been "dabbing" for the past six months. High dose intravenous steroids were initiated. The patient continued to have refractory hypoxemic and hypercapnic respiratory failure with ARDS requiring prone positioning. The patient ultimately required transition to veno-venous extracorporeal membrane oxygenation (VV-ECMO). The patient received 12 days of VV-ECMO and was eventually liberated after 19 days of ventilator support. At discharge he was asymptomatic, at his baseline level of function, and required no supplemental oxygen. He was discharged on daily steroids with a taper and outpatient follow-up.

DISCUSSION: The necessity of VV-ECMO utilization in "dabbing" associated acute lung injury represents a rare severe presentation. Dabbing is emerging as a trend among young adults and represents an under-investigated cause of severe inhalational lung injury.