INTRODUCTION

- Non-operating room anesthesia (NORA) environments present unique challenges for the anesthesiologist
- Unfamiliar settings
- Lack of resources - advanced airway and/or other emergency equipment, trained anesthesia providers
- Superior Vena Cava Syndrome presents the risks of
  - airway compromise
  - Cardiopulmonary collapse due to loss of intra-thoracic pressure

CASE PRESENTATION

2 yo male with SVC syndrome presenting to Vascular Intervenional Radiology for venogram
- Past Medical History: multiple deep venous thrombosis, short bowel syndrome due to retracting enteroctis, patent bismen valves
- When placed supine, patient developed facial swelling, developed symptoms of airway obstruction
- Induction:
  - Goals of induction:
    - maintain spontaneous ventilation to avoid increasing intrapulmonary and subsequently venous pressure.
    - Positioning patient in a head-up position utilizing adult troop elevation pillow to limit effect on venous drainage and decrease risk of airway obstruction
  - Induction:
    - emergency resources including notifying pediatric oto-laryngology colleagues and lack of resources
    - Inadequate or unfamiliar monitoring devices
    - Inadequate personnel
    - Inadequate or unfamiliar monitoring devices

MANIFESTATIONS OF SUPERIOR VENA CAVA SYNDROME

ETIOLOGIES OF SVC SYNDROME

- Mediastinal tumors: Non-Hodgkin Lymphoma
  - Hodgion Lymphoma, Neuroblastoma, Ewing Sarcoma, malignant degeneration of bronchogenic cyst
- Intrathoracic tumors: Hypernephroma
- Congenital heart disease and cardiovascular surgery: Repair of TGA, SVC to right PA
- Mediastinal fibrosis: mediastinal fibrosis
- Miscellaneous: thrombosis of SVC/related shunts for hydrocephalus
- Neuroblastoma
- Hodgkin Lymphoma

PRESENTING SYMPTOMS

ETIOLOGIES OF SVC SYNDROME

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PRESENTING SYMPTOMS

- Respiratory
  - Potentially difficult intubation due to impaired drainage and resultant facial, epiglottis and airway edema
  - Decreased reserve: Decreased FRC, TV, VT mismatch
  - Positioning key for induction: head up position
  - Adequate pre oxygenation
  - Advanced airway equipment and additional resources

COMPLICATIONS OF SVC SYNDROME

- Neuro
  - Increased ICP, decreased CPP
- Cardiovascular
  - Decreased preload, cardiovascular collapse on induction of general anesthetic – consider cardiopulmonary bypass cannulation prior to induction in high risk patients. Avoid positive pressure ventilation
- Respiratory
  - Potentially difficult intubation due to impaired drainage and resultant facial, epiglottis and airway edema
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REFERENCES