Unanticipated Challenges in Non Operating Room Anesthesia

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Introduction: As MRI imaging quality has improved and concerns for radiation exposure with CT remain, the frequency of diagnostic MRI scans in the Pediatric population has increased. As Pediatric Anesthesiologists we face various challenges in providing deep sedation or general anesthesia in remote locations. Providing care for diagnostic procedures adds an element of unknown clinical pathology and potential challenges. We describe management of an infant with an unanticipated difficult airway in MRI; followed by collaboration with multiple services based on unanticipated MRI findings.

Case description: A 7 month old male was scheduled for an urgent MRI at 19:00 on hospital day 2. The infant had been admitted for moderate dehydration and irritability in the setting of prolonged URI. Initial laboratory findings were significant for coronavirus, leucocytosis of 33,000 with 74% neutrophils. After volume resuscitation, the infant remained irritable and a lumbar puncture was planned. Simultaneously, anisocoria was first noted. Emergent head CT ruled out CNS pathology. Subsequently, CSF analysis showed high protein, with low white cells. Antibiotics were initiated. On hospital day 2, the infant remained irritable, developed mild left ptosis and subtle left neck fullness. There were no signs of respiratory distress, no difficulty with feeding and an otherwise unremarkable exam. Pediatric Infectious Disease and Neurology recommended MRI of head and neck.

In our institution the MRI is located remotely from the Operating Rooms and from the Pediatric ward; additionally there is no separate induction room. After uneventful mask induction, supplemental intravenous propofol, conventional laryngoscopy demonstrated severely distorted pharyngeal tissues. Mask ventilation was resumed. On the third attempt, the patient was successfully intubated using conventional laryngoscopy despite extreme displacement of the epiglottis and glottic opening. Had we been unable to secure the airway, the plan was to awaken the patient and intubate via fiberoptic scope in the OR environment. Supraglottic airway device was deemed inappropriate given the severe distortion of pharyngeal tissues. MRI images confirmed severe tracheal deviation and compression, severe distortion of pharyngeal tissues with a large left retropharyngeal abscess causing displacement and compression of the internal carotid. We were integral in coordinating multidisciplinary care for this patient, involving Pediatric Critical Care, ENT, nursing and radiology staff. The infant underwent successful surgical drainage and was extubated on POD 2.

Conclusion: The incidence of Pediatric retropharyngeal abscess is increasing. While most cases may be medically managed with intravenous antibiotics, rare cases may have significant morbidity. This case demonstrates challenges Pediatric Anesthesiologists face in providing care for non operating room anesthesia; specifically remote location, undiagnosed clinical pathology, limited staff for support, unanticipated difficult airway, and environmental hazards which may limit choices for interventions and patient care. As the incidence of various disease processes increase and use of imaging continues to rise, our expertise will be increasingly relied upon. As Pediatric Anesthesiologists, we must be flexible, prepared to handle challenging situations adeptly and collaborate to provide multidisciplinary care efficiently.