Airway Management in Pediatric Patient with Traumatic Prolapse of Necrotic Buccal Fat Pad

Primary Author: Julia Kang BSN
Rutgers-Robert Wood Johnson Medical School

Co-Authors: Adil Mohiuddin, MD; Ali Razvi, ; Geza Kiss, MD; sameet syed, M.D.; Saniya Syed, ; Shaul Cohen, MD;

Introduction: Prolapse of Buccal Fat Pad is an uncommon complication in infants and young children after traumatic injury; however, necrosis of the prolapsed intraoral buccal fat pad lesion into the oral cavity poses a precarious airway management problem for the anesthesiologist. Our purpose is to report a case of traumatic prolapse of buccal fat pad in a young child and briefly review the literature pertinent for proper airway management.

Clinical case: A 4 y/o female, 17.7kg s/p traumatic fall with a past medical history of allergic rhinitis presented for a right buccal lesion excision. The patient was drowsy, tired, and unable to cooperate with airway exam secondary to pain during preoperative interview. Parents stated she had been unable to take anything orally for 3 days. Preoperative vitals were HR-111, Temp-98.2 F, and BP-88/59. In depth preoperative discussion with the ENT forewarned of a potentially difficult airway given the intraoral location of the lesion. The patient was pre-medicated with 10mcg/kg of glycopyrrolate IV, and a pediatric flexible bronchoscope was prepped for the potentially difficult airway.

Intraoperatively an awake spontaneous ventilating inhalational induction with 8 MAC sevoflurane, 50/50 mix of Nitrous Oxide and Oxygen, was instituted while the patient remained hemodynamically stable with a spO2 of 100% throughout. Ventilation was assisted initially and then transitioned to controlled manual ventilation. With an ENT surgeon present, cautious direct laryngoscopy (DL) with a Miller 1 revealed a large necrotic mass in the oral cavity (Fig 1). To minimize any potential rupture of the lesion leading to uncontrolled breathing in an unsecured airway situation, we judiciously advanced the laryngoscope around the mass and used an LTA, which was appropriately dosed. A 4.0 cuffed oral RAE was placed atraumatically, and secured slightly skewed to the left. Meticulous dissection was instituted by the ENT and the lesion was excised without extensive blood loss. The specimen (Fig 2) was sent for pathological evaluation and revealed necrotic adipocytes. At the end of the procedure, the oropharynx was thoroughly suctioned and patient was extubated deep without any complications. Loss of an airway in this patient with a large necrotic intraoral mass could have been potentially fatal and we bypassed any mishap by vigilantly avoiding any trauma to the mass, and being prepared for a potentially difficult airway. At end of case, the patient was uneventfully transferred to the PACU.

Discussion: The buccal fat pad, also known as the suckling pad in infants, encompasses a central body along with the buccal, superficial, pterygoid, and deep temporal extensions. Traumatic injury to this pad, which usually includes but is not limited to falling with sharp objects in the mouth, may cause herniation or prolapse of the buccal fat pad into the oral cavity. While extremely rare, it
has been described in the literature as a traumatic herniation of the buccal fat pad or a traumatic pseudolipoma. As of 2000, only 31 cases of traumatic herniation of the buccal fat pad have been documented in the literature. A majority of these cases involve children of 4 months of age to 4 years of age. Clinically, this herniation/prolapse may present as a pedunculated mass originating from the buccal mucosa near the parotid duct out into the oral cavity immediately or shortly after the traumatic injury has taken place. The mass may be soft to the touch, and nontender, with the color of the mass transitioning from yellow or red to purple or blue as thrombosis and necrosis proceeds. A histological examination of the herniated mass may show non-capsulated adipose tissue and connective tissue stroma, alongside inflammatory cells, bacteria, and necrotic tissue. Treatment consists of either replacing the tissue back into its original spot or excising the mass. Replacing the tissue back to its original spot is employed if the diagnosis is caught early on and thus the mass is small in size and very little inflammation has taken place. Excision takes place when the mass is too large in size or necrosis is evident.

Airway patency is a challenge in patients with intraoral lesions. Superimposed necrosis and pediatric age group further complicates the clinical picture and requires vigilance and foresight on the anesthesiologist’s part to avoid perioperative airway loss and morbidity. A thorough discussion with the surgical team about plan of care preoperatively and maintaining consistent intraoperative communication is key to safe management of such complicated patients. By preparing with a modified spontaneous inhalational induction we were able to bypass accidental loss of airway if the lesion acted like a ball valve occluding the laryngeal inlet. Meticulous attention to tiny details can be clinically rewarding.

References:
