

Airway Management for a patient with Pierre-Robin Sequence undergoing Dental Rehabilitation Under General Anesthesia

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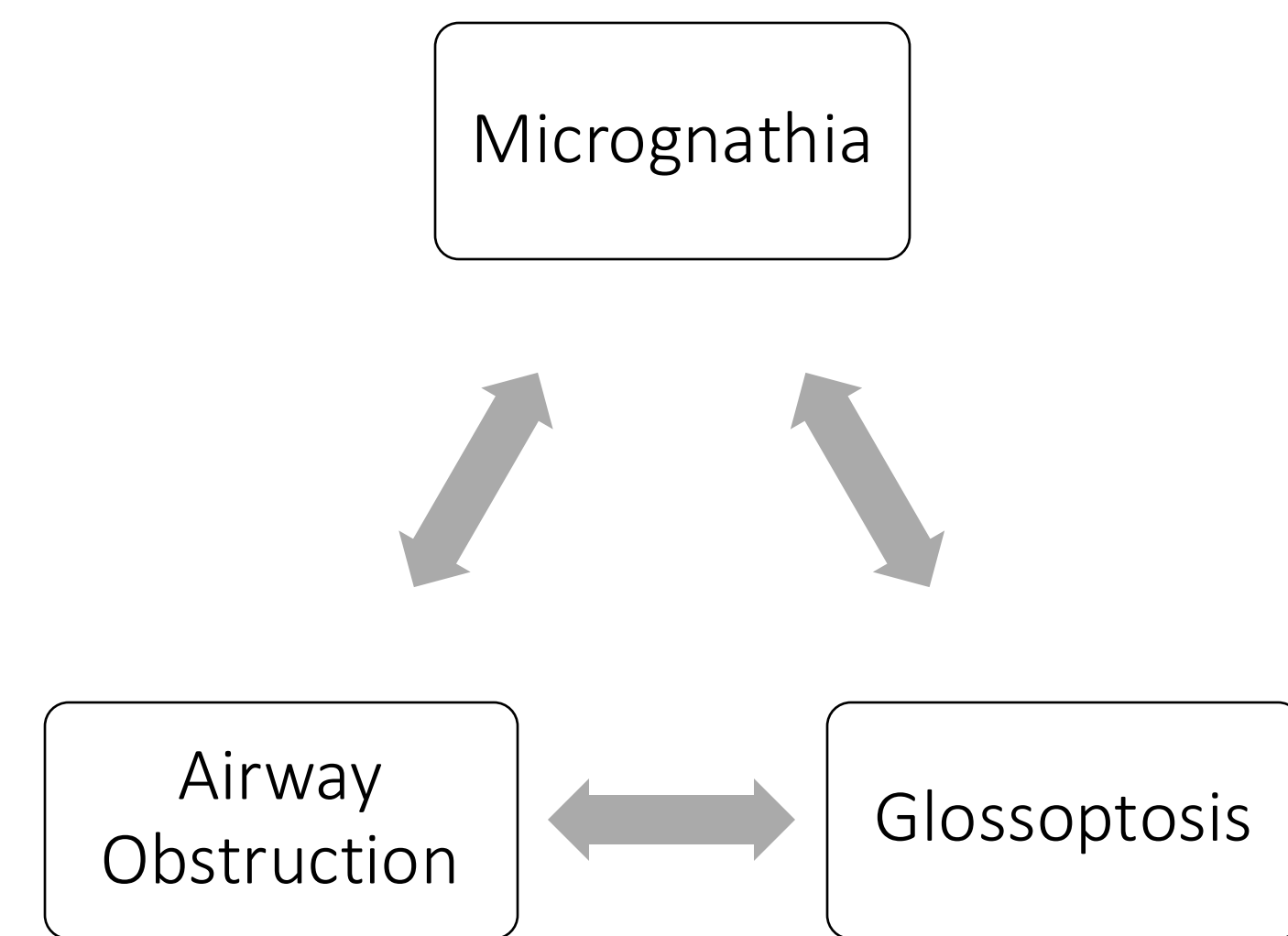
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Background

Pierre Robin Sequence (PRS)



- Prevalence 1:5,000 to 1:85,000
- Can occur in isolation but commonly associated with other syndromes (Stickler, 22q11, etc.)

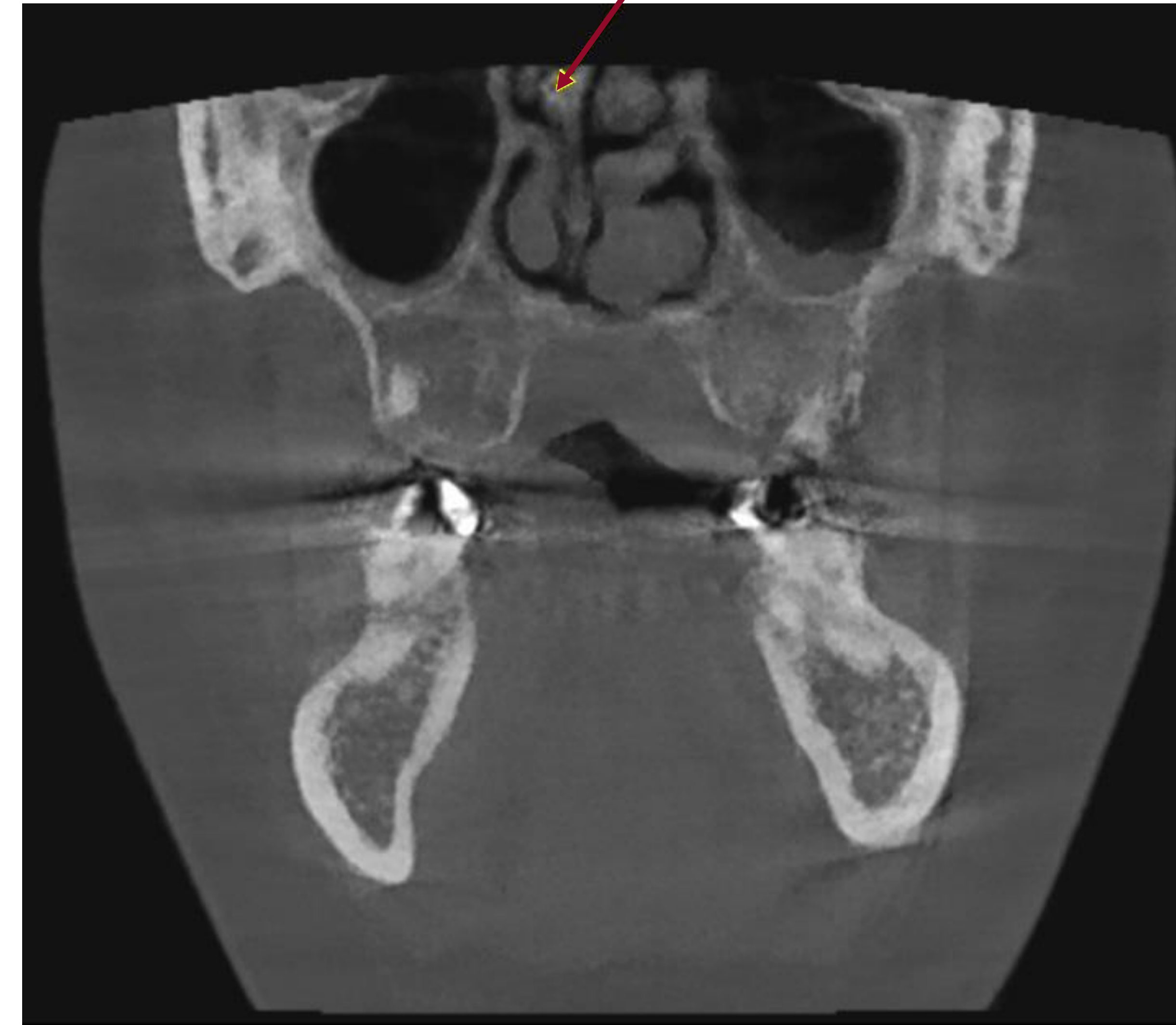
Case Presentation

We present the case of a 29-year-old female with Pierre-Robin Sequence, developmental delay, and a known difficult airway scheduled for elective ambulatory dental rehabilitation under general anesthesia

Preoperative / Intraoperative Management

- A prior anesthesia record from a different tertiary care institution demonstrated an inability to nasally intubate the patient for a dental rehabilitation with oral intubation taking over 1 hour
- Severe micrognathia, reduced thyromental distance, and glossoptosis were identified during consultation examination
- A preoperative cone beam computed tomography (CBCT) scan demonstrated an obstructive bone spur in the right nasal middle meatus and potentially obstructive adenoid hypertrophy
- ENT consultation obtained to arrange standby for a surgical airway on the day of surgery. Preoperative Fluticasone nasal spray was recommended to help reduce nasal obstruction
- Intramuscular ketamine and dexmedetomidine premedication was administered to facilitate intravenous cannulation due to poor patient cooperation
- The patient was sedated deeply while maintaining spontaneous respiration. The nose was prepared with 0.05% Oxymetazoline spray and 5mL of 2% lidocaine jelly prior to insertion of a 26Fr nasopharyngeal airway (NPA)
- A heat softened 5.5mm Nasal RAE ETT was placed over a 10Fr soft suction catheter which was used to negotiate the nasal passage and allow the ETT to be inserted into the nasopharynx
- Nasotracheal intubation was performed following preoxygenation and airway topicalization with a combined video laryngoscope / flexible video endoscope on a split screen monitor

Septal Spur Narrowing Middle Meatus



Potentially Obstructive Adenoid Hypertrophy



Video laryngoscopy showing flexible endoscope approaching the vocal cords

Video endoscope passing through the vocal cords



Discussion / Conclusion

- Airway anatomy of PRS patients can present incredible challenges to the anesthesiologist
- Meticulous planning is essential for success
 - Preop CBCT to evaluate airway anatomy
 - Difficult airway equipment (NPA, SGA, video laryngoscope, flexible bronchoscope)
 - Additional personnel skilled in surgical airway access
- Awake endoscopic intubation techniques are exponentially more challenging in a neurodivergent patient population
- Nasotracheal intubation was completed in 45 minutes time and the patient underwent an uneventful general anesthetic

References Available on Request

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