Airway Management in a 14 year old female with a giant facial tumor

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Abstract
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A 14-year-old female with a diagnosis of fibrous dysplasia of the face was referred to our institution for staged tumor resection. The patient had previously undergone multiple debridements, with more aggressive tumor recurrence after each. At the time of presentation, she had extensive dysplasia of the midface, causing severe distortion of bony and soft tissues. We present this patient to underscore the importance of a comprehensive pre-operative evaluation, as well as illustrate our peri-operative management.

Case Presentation
Due to obliteration of her nose and sinuses, she was forced to breathe through her mouth. When supine, the tumor obstructed her airway, however, she could assume a semi-upright and lateral recumbent position without airway obstruction.

Our airway examination revealed normal thyromental distance, cervical motion, mouth opening, MP class-II; CT scan showed a patent oropharyngeal airway. Due to extensive facial involvement, multiple expected procedures, and location of the lesion, our multidisciplinary team planned a tracheostomy prior to surgical resection. Due to the tumor’s size and location, we anticipated difficulty with laryngoscopy, as well as mask ventilation, however, the clinical exam as well as CT suggested that LMA placement would be feasible.

Awake fiberoptic intubation was considered, however, based on our Comprehensive pre-operative airway assessment, and potential psychological effects, we elected to proceed with an intravenous induction and LMA placement as a conduit for intubation. With the patient in the sitting position, midazolam, lidocaine and propofol were administered and titrated until an adequate depth of anesthesia was obtained, maintaining spontaneous ventilation; a LMA was then placed and the trachea intubated through it using a fiberoptic bronchoscope. Tracheostomy was performed and both the LMA and oro-tracheal tube were removed.

Pre-operative CT image

Pre and post-operative CT image

Pre-operative examination

CT reconstructed image of facial lesion

Post-operative image

3-D models created to aid in surgical reconstruction


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