

Acute Sialadenitis and Threatened Airway following Posterior Fossa Surgery

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Anesthesia mumps (also known as acute sialadenitis) is a rare postoperative complication related to extreme rotation or flexion of the head during surgery.¹ Acute sialadenitis causing acute airway obstruction and requiring emergent tracheostomy has not been reported in the past. We describe a case of acute submandibular and parotid sialadenitis causing acute respiratory distress after posterior fossa craniotomy for the right cerebellopontine (CP) angle lesion. Informed consent has been obtained from the patient for the images in this article.

A 45-year-old female weighing 60 kg with no known comorbidities presented with vestibular schwannoma in the right CP cistern. The patient was posted for a right retrosigmoid suboccipital craniotomy and tumor excision in the left park bench position. In the operating room, the standard ASA (American Society of Anesthesiologists) monitors, such as electrocardiography (ECG), noninvasive blood pressure, and pulse oximetry (SpO₂), were initiated, and anesthesia was induced with propofol 2 mg/kg, fentanyl 3 µg/kg, and vecuronium 0.1 mg/kg. The trachea was intubated with a 7.5-mm cuffed PVC (polyvinyl chloride) endotracheal tube fixed on the left corner of the mouth to facilitate nerve monitoring of the right facial nerve, and a bite block was inserted. The patient was placed in the left park bench position, and the head was fixed in a Mayfield clamp. A two-finger width between the mandible and clavicle was confirmed. She was ventilated with oxygen and air, with FiO₂ being 0.5, and anesthesia was maintained with propofol-based total intravenous anesthesia with Schneider model to target effect-site concentration of 3.5 µg/kg and infusion of fentanyl 1 µg/kg/hour and atracurium 0.5 mg/kg/hour. The surgery lasted for 7 hours, and the patient was hemodynamically stable. Postsurgery, when the patient regained consciousness as there was no facial edema, macroglossia, or new neurologic deficits, the patient's trachea was extubated.

Four hours later, the patient complained of respiratory distress. Upon inspection, the patient was found to have a swelling of the lateral aspect of the neck on the left and to

have inspiratory stridor. Adrenaline nebulization was initiated; however, the respiratory distress progressed rapidly. On examination of the oral cavity, there was no macroglossia or pharyngeal edema, and on indirect laryngoscopy, the glottis and vocal cords could not be visualized. Hence, it was decided to reintubate the patient. Reintubation was attempted with a video laryngoscope after confirming the ability to mask ventilate, but the soft tissue edema precluded the larynx's visualization. Immediately, the surgeons on standby performed an emergency surgical tracheostomy, and the airway was secured (►Fig. 1). A computed tomography (CT) scan of the head and neck was performed, which showed a hypodense collection along the left parapharyngeal space, left side of pharyngeal mucosal space, left carotid space, and visceral space, extending till superior mediastinum. Besides, there was a marked displacement of the larynx and trachea towards the right side along with features suggestive of left parotitis and myositis of left masseter (►Fig. 2). A neck fasciotomy was performed to relieve the pressure symptoms. The neck swelling subsided over the ensuing 4 to 5 days, and the patient was decannulated on the ninth postoperative day.

Acute postoperative sialadenitis after general anesthesia has an incidence of 5 in 3,000.² In patients undergoing surgery in retrosigmoid and far-lateral approaches, Kim et al reported the incidence of acute sialadenitis to be around 0.84%.² In our case, acute sialadenitis caused acute respiratory distress requiring an emergent tracheostomy. The unique features of acute sialadenitis include a presentation with stridor and visible swelling in the neck and submandibular area, usually on the side contralateral to the side of surgery.¹ Submandibular swelling is known to cause respiratory distress, which can be rapidly progressive, requiring emergency reintubation.³ The swelling of the soft tissue can also lead to brachial plexopathy.⁴ In our case, the patient did not develop any weakness of the upper limbs. Diagnosis is confirmed by CT scan or MRI (magnetic resonance imaging), demonstrating an enlarged submandibular gland and with edema of the surrounding soft tissue.



Fig. 1 Photograph showing severe swelling of face and neck with tracheostomy tube in situ.

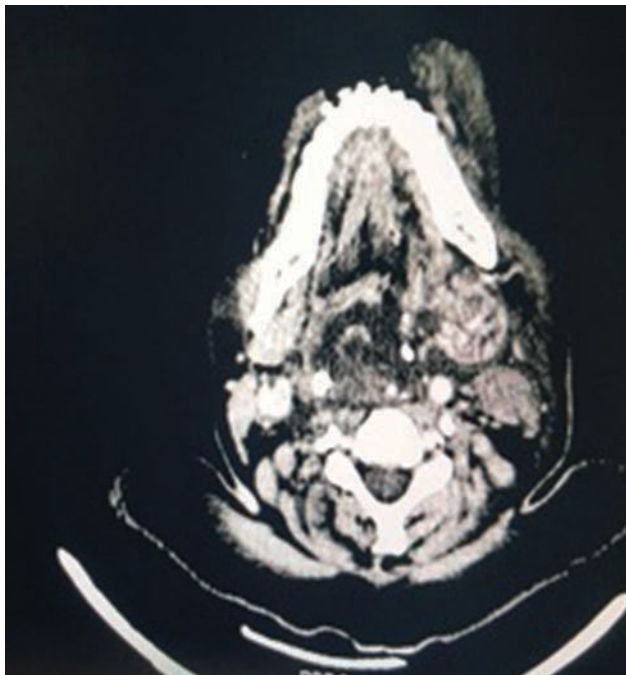


Fig. 2 Postoperative computed tomography scan showing the swelling of parotid and submandibular glands.

Risk factors include the retrograde flow of air through Stensen's orifice during straining and coughing during

anesthesia, retention of secretions in the salivary duct, and dehydration. The use of drugs such as succinylcholine, atropine, and opioids has been reported to cause an increased incidence of postoperative sialadenitis.⁵ Other causative factors include salivary gland obstruction due to physical compression by lateral position, positions that rotate and flex the neck, compression by endotracheal tubes, mucosal lesions, edema, and sympathetic nervous system activation causing increased salivary viscosity leading to occlusion.⁵ Extreme head rotation leads to mechanical compression of the facial artery, which supplies the submandibular gland, leading to ischemia. In the postoperative period, as the head position returns to neutral, reperfusion injury of these tissues can occur.⁶ We placed the endotracheal tube on the contralateral side of surgery to facilitate facial EMG monitoring. This might have enhanced the compression of the submandibular gland and the encompassing tissues. The use of bite block throughout surgery may additionally be a predisposing factor. Therefore, it is recommended to secure the endotracheal tube on the ipsilateral side of the surgery to reduce tissue compression.

Acute sialadenitis following anesthesia is a rare complication that should be considered as one of the etiologies in patients presenting with acute postoperative respiratory distress, especially following surgeries in the park bench position. In a threatened airway scenario caused by sialadenitis, securing the airway could be difficult. Emergency tracheostomy is the next feasible option, which could be challenging due to the distorted anatomical landmarks owing to the neck swelling.

Conflict of Interest

None declared.

References

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