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Letter to Editor

Anesthetic challenges in a patient of atypical Ludwig's angina

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Sir,

Ludwig's angina is a potentially life-threatening bilateral diffuse gangrenous cellulitis of the submandibular and sublingual spaces. When scheduled for surgery, it poses multiple anesthetic challenges, particularly compromised and obstructed airway, limited mouth opening, and potential hemodynamic instability during airway manipulation. However, atypical presentations may pose diagnostic and therapeutic conundrum.

A 20-year-old male (weight–60kg, height–155cm) presented to the emergency department with features of rapidly progressive swelling associated with pain on left side of face and neck, fever associated with chills and complaints of difficulty in swallowing for the past 3 days.He gave a history of extraction of left 2^{nd} molar tooth six days back. On examination, he had poor oral hygiene. There was diffuse erythematous swelling on the left side of the neck extending to the midline (Figure 1). There was history of multiple fever spikes (maximum 102°F) along with tachycardia (heart rate- 115-120 beats/min) and restlessness. Airway examination revealed very limited mouth opening and restricted neck movements.(Figure 1)

Figure 1: Pre operative frontal view

Based on the clinical presentation and history, Ludwig's angina was suspected and the patient was admitted to the intensive care unit (ICU). He was started on intravenous antibiotics and was scheduled for emergency surgical decompression of the abscess.A primary plan of awake fibreoptic intubation (AFOI) was made and a backup of tracheostomy was arranged. The same was explained to the patient and written informed consent was obtained. The patient was premedicated with intramuscular glycopyrrolate 0.2mg around 30mins prior to AFOI. In the OT, standard monitors were attached and infusion of ringer's lactate was started. A loading dose of intravenous dexmedetomidine

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(1mcg/kg) was administered over 10 minutes followed by maintenance dose (0.2mcg/kg/h) titrated to achieve a Modified Ramsay Sedation Score between 2 and 3. Airway was anesthetised by nebulisation with 4mL of 4% lignocaine. Also, lignocaine 10% two puffs were sprayed onto the posterior pharyngeal wall. A4.9mm OD flexible fiberoptic bronchoscope was checked and loaded with a 7.5mm ID cuffed endotracheal (ET) tube. An epidural catheter was passed through the working channel so as to keep the tip just distal to the tip of the bronchoscope. The right nostril was instilled with lignocaine 2% gel. The bronchoscope was inserted via the right nostril and progressed. Using the spray as you go (SAYGO) technique, carefully spraying lignocaine 2% on the airway structures along the way; the vocal cords were visualized. 1mL of lignocaine 2% was sprayed over the vocal cords and the ET tube was atraumatically advanced into the trachea.After confirmation of the correct ET tube placement, anesthesia was induced intravenously with fentanyl 100mcg,propofol 60mg, and atracurium 30mg. Though, clinically the infection seemed limited to the left submandibular and parapharyngeal spaces, intraoperative findings showed a bilateral extent of abscess involving bilateral sublingual, submental and submandibular spaces, confirming the diagnosis of Ludwig's angina. The patient remained hemodynamically stable throughout the procedure. The patient was shifted to ICU with ET in situ in view of marked airway edema. The trachea was extubated successfully the following day and he was discharged from the hospital 5 days later.

Ludwigs's angina is a rapidly progressive cellulitis that starts in the submandibular space, resulting from an infected lower molar usually 2^{nd} or 3^{rd}, and then rapidly spreads to involve the sublingual space, usually on a bilateral basis.[1] A slight infection sets off Ludwig's angina, which then causes induration of the upper neck, discomfort, trismus, and tongue elevation.Depending upon the severity of condition patient may present with dyspnea, dysphagia and drooling.[2] With woody and calloused swelling under the neck and restricted mouth opening, both mask ventilation and intubation become difficult in such patients.[3] Standard direct laryngoscopies will often fail because of firmness in the floor of the mouth and the posterior displacement of the tongue.[4] Given the patient's airway compromise, limited mouth opening, and potential for hemodynamic instability during airway manipulation, AFOI with SAYGO technique is considered the optimal approach.[5] Tracheostomy should be readily available in case AFOI is unsuccessful. Airway should be topically anesthetized as the nerve blocks are not feasible in such cases because of the distorted neck anatomy and the infection at the site.

Ludwig's angina poses significant challenges to anesthesiologists and thus warrants detailed patient assessment, meticulous airway management with AFOI, and the judicious use of adjuncts like dexmedetomidine to optimise patient outcomes. Dexmedetomidine is preferred for sedation owing to its negligible propensity to cause respiratory depression.Here, an atypical presentation like a unilaterally involving Ludwig's angina poses a diagnostic dilemma and a missed diagnosis can hamper the successful management of airway in such cases. The anesthesiologist should keep a high index of suspicion in these atypical clinical presentations and should always consider using gold standard technique of AFOI to manage these airways.

1. Conflict of Interest

None.

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