

Squamous Cell Carcinoma of the Oral Cavity During Intubation

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Background

- With 90% of oral malignancies consisting of oral squamous cell carcinoma (OSCC), oral cancer constitutes the 6th leading common cancer worldwide (4).
- Oral cancer can vary in different types of affected tissues in the oral cavity, including odontogenic tissues, salivary glands, lymphatic tissues, muscles, or bone → Growth into different tissues leads to changes in anatomical structures, leading to trismus, dyspnea, torturous airway, and airway obstruction (1), causing presumably low-risk procedures to high-risk due to possible perioperative complications.
- Squamous cell carcinoma (SCC) affecting the airway with severe trismus, less than 1 fingerbreadth, is a rare complication (2) that gives rise to a difficult airway. Therefore, a detailed anesthetic preoperative assessment and plan is paramount for successful airway management, such as physical examination, CT scans, understanding airway tools limitation, anesthetic management, and plans to advert operating room crisis.

Objective

- In this case study, we explored the presentation of oral mandibular tumor abutting the airway with friable tissue and the importance of utilizing fiberoptic intubation in these patients.

Case

- **Patient:** 70 year old female, BMI 23, with SCC of mandible pending surgery with LLU ENT who presented with several weeks history of uncontrolled pain and poor oral intake. She had only been able to tolerate thick liquids and lost 16 lbs over the last few weeks from the inability to chew food and dysphagia in the setting of oropharyngeal SCC involving left mandible.
- **Past Medical History:** SCC of mandible, chronic back pain (on Norco), hyperlipidemia. CT-maxillary-facial at outside hospital with 4x3x3 cm soft tissue mass left lower mouth & associate bone erosion in left body of mandible.
- **Past Surgical History:** Laparoscopic appendectomy, laparoscopic cholecystectomy, neck surgery.
- General surgery planned for placement of laparoscopic gastric tube to optimize nutritional status prior to operating room. Ear-Nose-Throat (ENT) on standby for emergency tracheostomy if intubation was unsuccessful and airway was compromised.
- General anesthesia was required because patient could not consume anything orally, including food and medication. Nasal gastric tube was attempted multiple times and failed as patient was unable to tolerate placement. Therefore, the operation was performed for gastric tube placement.
- In this case, the patient had a preexisting squamous cell carcinoma in the left lower mandible. Awake left nasal fiberoptic intubation with hurricane spray and nebulized 1% lidocaine was successful with a micro laryngeal tube due to patient's small mouth opening of <1 fingerbreadths.

Imaging

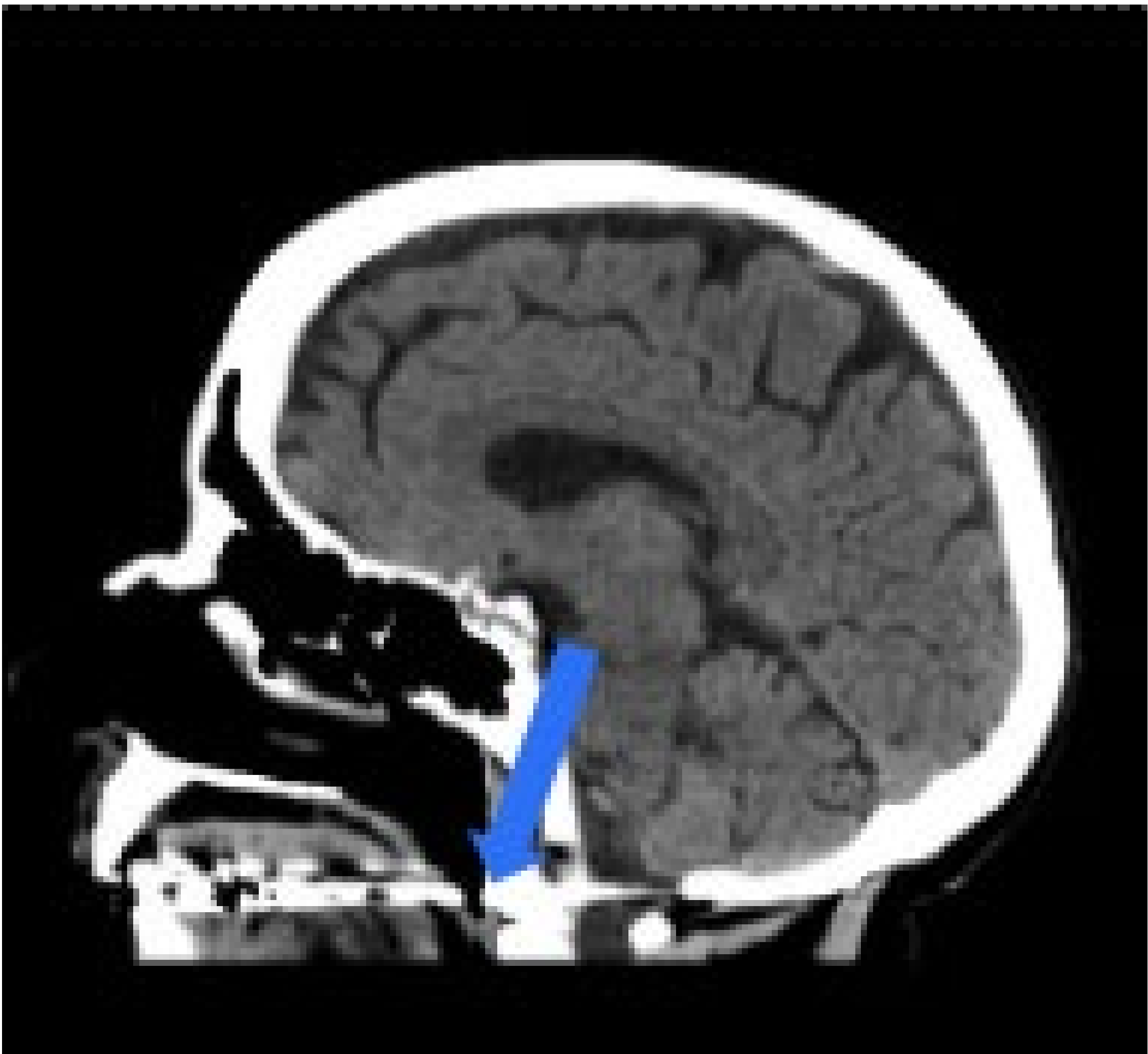


Figure 1. Sagittal view of irregular morphology of maxillofacial bones with impression notable for 4.1 x 3 x 3.1 cm soft tissue mass in the left lower mouth and "associated bone erosion seen in left body of mandible."

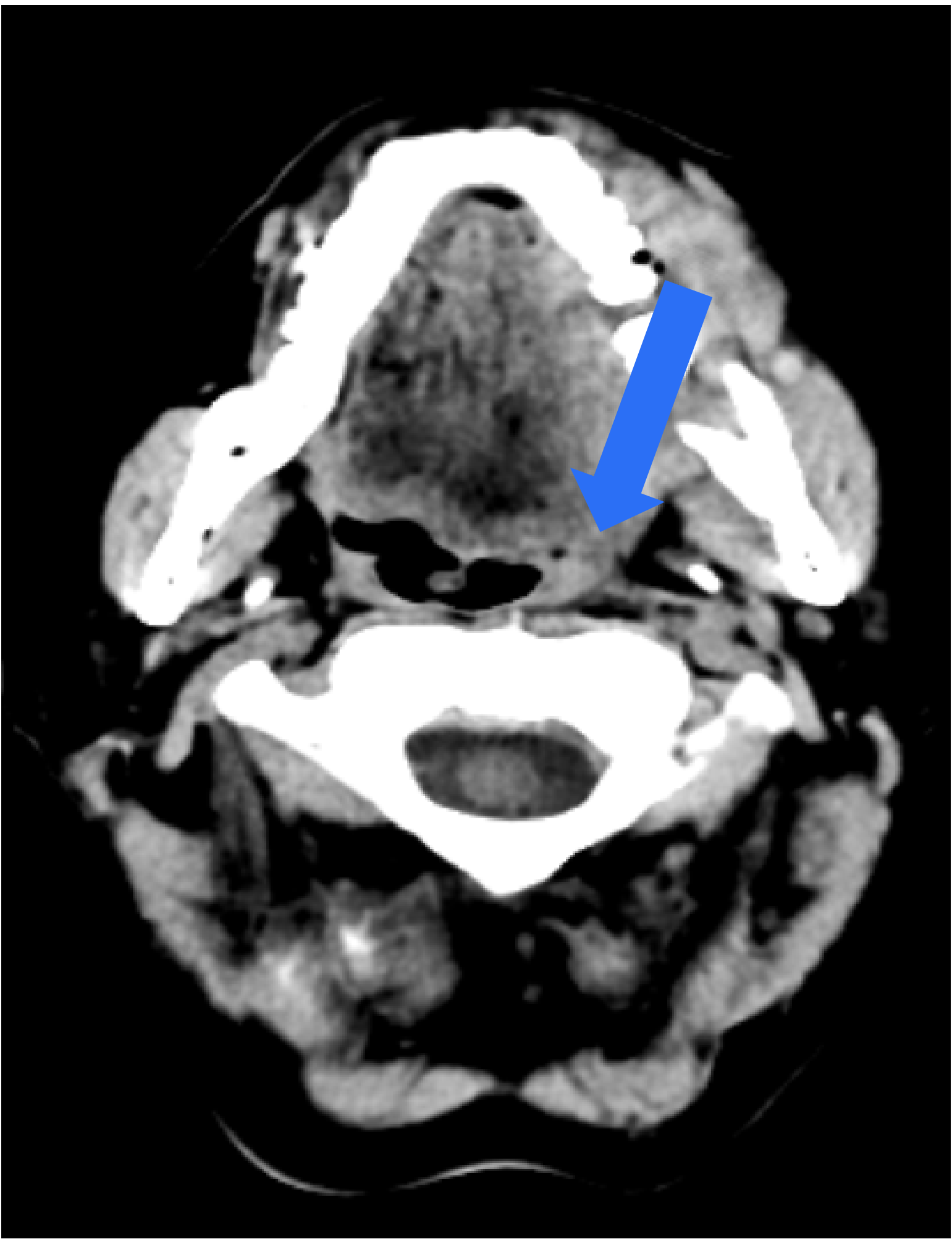


Figure 2. Coronal plane of left posterior oropharynx with the irregular morphology of tumor.



Figure 3. Complete mouth opening of patient awake; less than 1 fingerbreadth.

Case Findings

- Patient had a preexisting squamous cell carcinoma in the left lower mandible. Awake left nasal fiberoptic intubation after nasal trumpet dilation, hurricane spray, and nebulized 1% lidocaine was successful with a 6.0 endotracheal tube using Seldinger's technique.
- A comprehensive physical examination eliminated the usage of video or direct laryngoscopy due to patient's severe trismus and unknown view of airway secondary to mass burden.
- CT scan imaging helped identify mandibular bone erosion, likely due to chronic SCC and also assisted in mapping the positions and size of mass.
- Awake intubation is required as spontaneous respiration allows for time and precision for difficult airways (5). Comparatively, a lost of spontaneous respiration will create a time-sensitive procedure leading to further possible complications and, ultimately, an emergency airway.
- Utilizing fiberoptics for intubation reduced risks of complications, such as injury to friable masses causing leakage of exudative/bleeding of masses (3) or edematous changes leading to obstructed view of airway thus compromising successful intubation, by allowing visualization of changes in the airway along with accurate placement of endotracheal tube.
- Recognizing and understanding upper airway pathology, such as OSCC, and risk factors for difficult intubation, such as limited mouth opening, blood or secretions in the oropharynx, displaced airway, helped devised an anesthetic plan for limiting the risks of an unsuccessful intubation while accounting possible airway emergency.

Conclusion

- In this instance, direct or video laryngoscopy demonstrated limited efficacy due to patient's severe trismus and changes to airway structures due to OSCC.
- Therefore, awake nasal fiberoptic intubation provided visualization of the vocal cords and avoidance of friable mass burden. Patients with OSCC have risk of friable masses, leading to possible obstructed view of airway from bleeding, leakage of exudative material, or edematous changes from trauma.
- It is crucial to identify signs of difficult airways and swiftly create a detailed anesthetic preoperative plan, including comprehensive physical examination, CT imaging, fiber optics, and awake intubations. Although OSCC is the 6th leading common cancer worldwide, potentially life-threatening emergency may occur due to airway collapse, therefore, intubation should be done gently with awake fiber optics to bypass any mass burden.

References

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