

Management of a Lost Airway During an Emergent Post-Glossectomy Hematoma Evacuation

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CASE PRESENTATION

- A 70-year-old male with oral squamous cell carcinoma presented for a hemiglossectomy with neck dissection.
- The patient had an uncomplicated intubation using video laryngoscopy and was successfully extubated post-procedure.
 - Several hours later he was noted to have neck swelling at the incision site extending laterally to midline.
 - The patient was asymptomatic with a palpable, midline trachea.
 - He emergently returned to the OR for evacuation of the hematoma.
 - After discussion with the ENT team, it was determined that the lateral location of the hematoma would not interfere with intubation.
 - Following induction, two providers attempted glidescope intubation but were unable to visualize the glottis.
 - The patient could not be ventilated, resulting in severe oxygen desaturation, hypotension and bradycardia requiring epinephrine and atropine.
 - ENT performed an emergent tracheostomy and subsequently evacuated the hematoma.

RISK FACTORS

- Surgical intervention of the oral cavity/oropharynx and hypopharynx/larynx
- Male Sex
- Black race
- Patients with >4 comorbid health issues
- Coagulopathy
- Addition of a free flap procedure increases the odds of developing a hematoma by 1.87.

DISCUSSION

An unanticipated difficult airway can be challenging for anesthesiologists and can lead to significant patient morbidity including airway trauma, hypoxic brain injury, and cardiopulmonary arrest. A postoperative neck hematoma after major head and neck surgery is seen in approximately 3.4% of patients and there is a 6.4 times increase in inpatient mortality. It is important to identify patients at high risk of developing a hematoma as it could allow surgeons to take extra precautionary measures such as more frequent post-op monitoring, use of suction drains, and increase hemostatic measures. Catastrophic airway compromise can arise suddenly and without warning in these patients as the progression of these hematomas are often unpredictable. It is crucial for anesthesiologists to be prepared to manage these emergency airways with methods including surgical intervention and provide early pharmacologic intervention to prevent hemodynamic compromise.

PATHOPHYSIOLOGY

- Airway compromise caused by an neck hematoma in multifactorial in nature
- It is in part due to tracheal deviation/ compression directly by the hematoma
 - A more significant factor is interference of lymphatic and venous drainage caused by compression of low pressure capacitance vessels by the expanding hematoma
 - Arterial blood continues to supply laryngeal and pharyngeal structures, resulting in further compression and thus increased back pressure and plasma leak
 - Hematoma can expand rapidly by spreading to communicating neck space and dissecting among various tissue planes

CONCLUSION

- Postoperative neck hematomas, though uncommon, are often unpredictable and challenging to manage
- Providers must remain vigilant and be prepared to perform a surgical airway
- Airway compromise is due, in a large part, to edema that results from decreased venous/lymphatic drainage and may persist even after hematoma evacuation
- Hemodynamic compromise may ensue and should be treated early to prevent cardiovascular collapse

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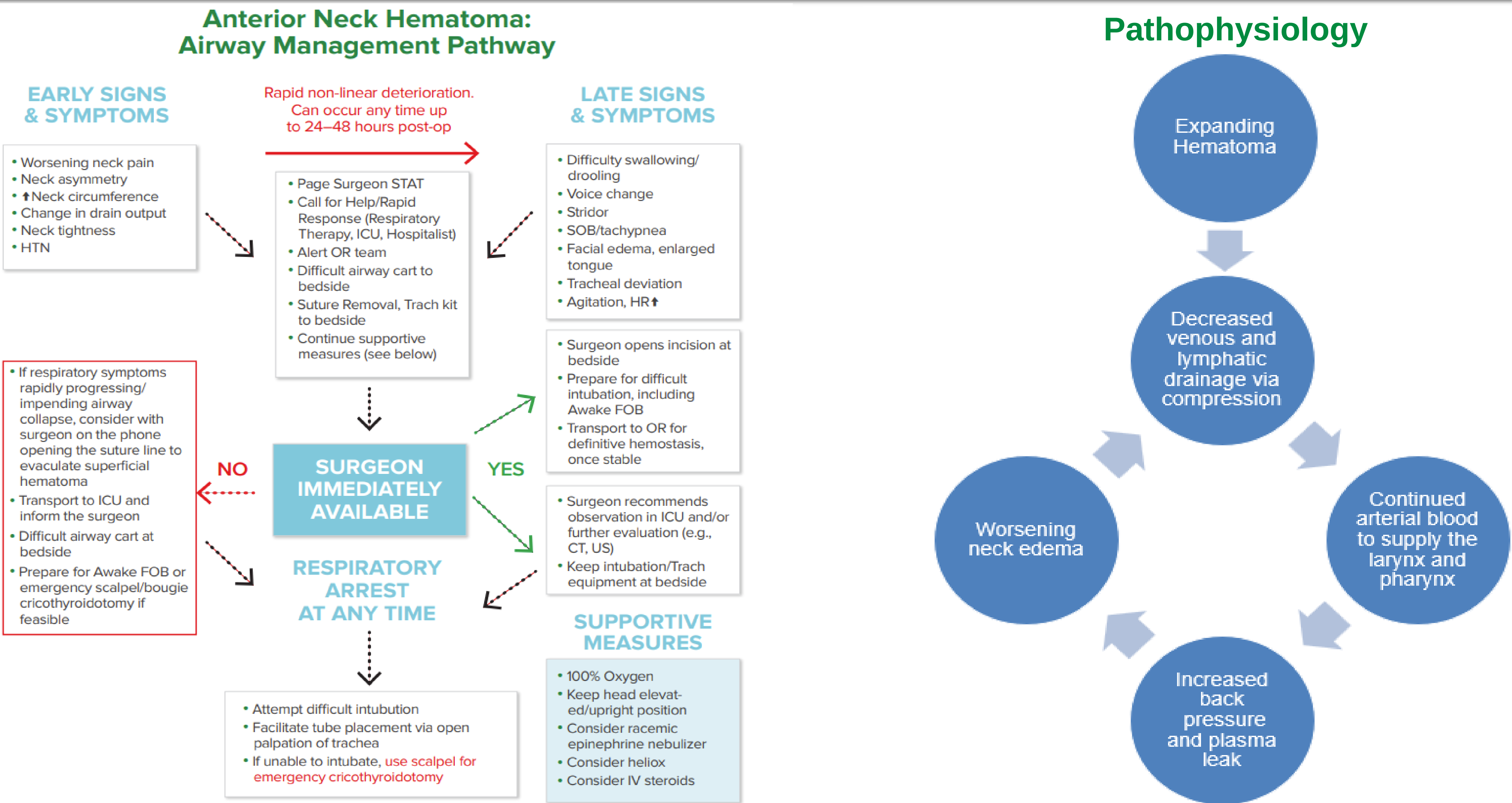


Figure 1: Anterior Neck Hematoma Airway Management (Germasimov et al., 2021)

Note that neck edema may persist even after hematoma evacuation and may lead to persistent airway compromise