

Successful Cricothyroidotomy for Acute Epiglottitis with Super-Super Obese Patient



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Introduction

- **Acute epiglottitis** is a rapidly progressive and potentially fatal cause of upper airway obstruction.
- Prompt recognition and early airway management are essential to prevent complete airway collapse [1].
- Obesity, particularly **super-super obesity** (BMI ≥ 60), presents significant challenges to airway visualization, patient positioning, and ventilation [2].

- This case demonstrates successful **cricothyroidotomy** after failed attempts at orotracheal intubation in a patient with severe upper airway obstruction complicated by extreme body habitus.

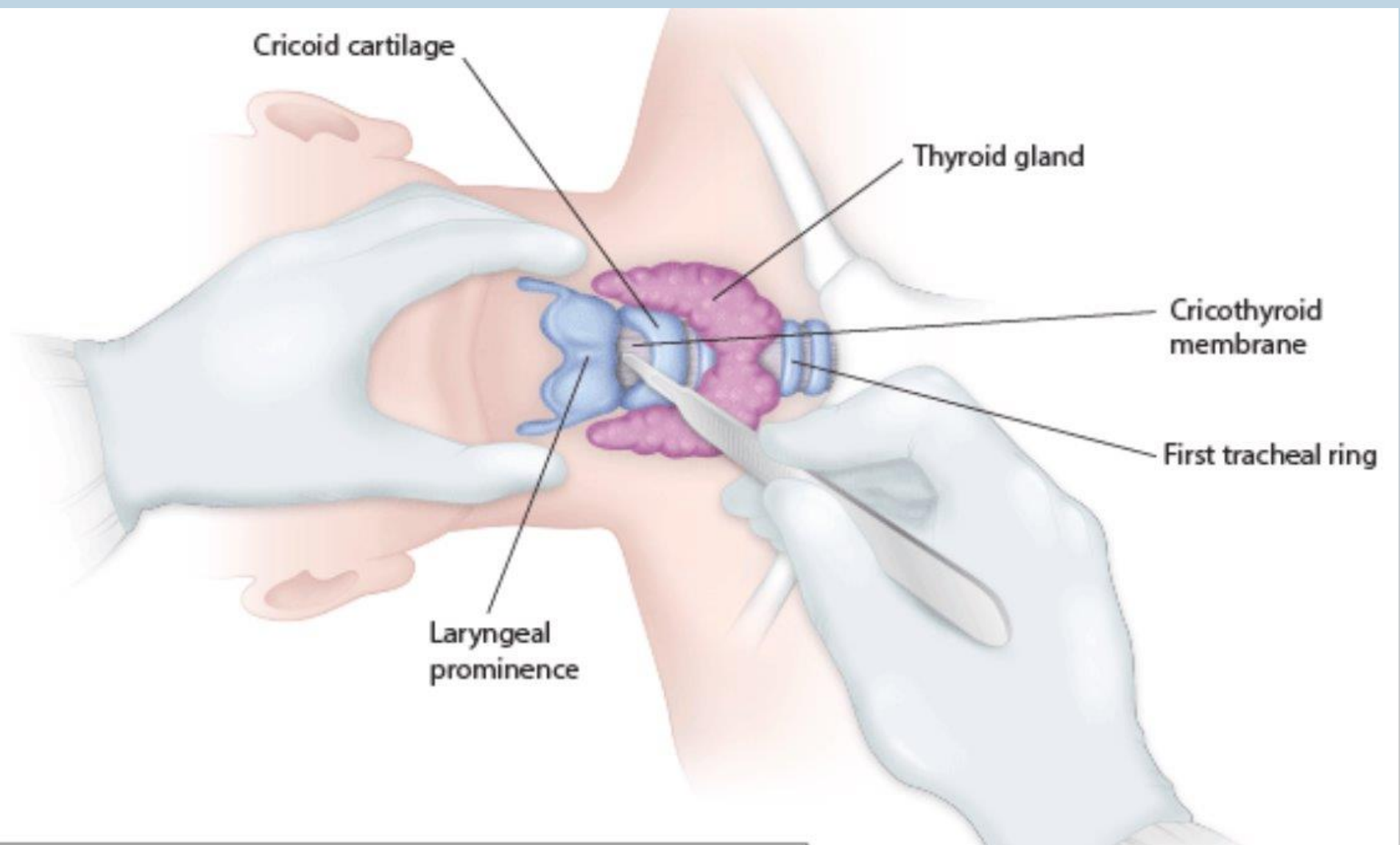


Figure 1. Cricothyroidotomy Anatomy [5]

Background

- **Cricothyroidotomy** is the definitive emergency surgical airway when non-surgical attempts fail or when a “cannot intubate, cannot oxygenate” (CICO) scenario is reached [3].
- Early transition to a surgical airway is associated with reduced morbidity in high-risk patients.

Indications include:

- Severe upper airway obstruction (e.g., epiglottitis, laryngeal edema).
- Failed intubation with worsening oxygenation.
- Anatomical factors preventing laryngoscopy or supraglottic device placement [4].

Challenges in super-obese patients:

- Thick anterior neck tissue obscuring landmarks.
- Increased difficulty achieving adequate bag-mask ventilation.
- Rapid desaturation due to low pulmonary reserve [4].

Case Presentation

A 39-year-old male with asthma, hypertension, major depressive disorder, obstructive sleep apnea, and super-super obesity (BMI 66.5) presented with a 1-day history of worsening sore throat, muffled voice, stridor, and inability to speak. He could not lie supine due to dyspnea.

Initial Management

Treated with dexamethasone, unasyn, NAC/albuterol, and IM epinephrine with transient symptom improvement, however respiratory status continued to decline. Attempts at intubation using both **GlideScope** and **fiberoptic bronchoscopy** were unsuccessful due to massive epiglottic swelling. Pulse ox dropped to 62% and temporary ventilation was achieved using an LMA with strong chin-lift maneuver.



Figure 2. Lateral neck XR demonstrating acute epiglottitis

Definitive Airway

A **cricothyroidotomy** was performed emergently, successfully securing the airway with placement of an endotracheal tube.

Patient was taken to the OR for tracheostomy, but was unsuccessful due to body habitus and deep trachea. On postoperative day (POD) 3, he underwent I&D for an epiglottal abscess and was successfully converted to orotracheal intubation. The patient was extubated on POD 10 and recovered without further airway complications.

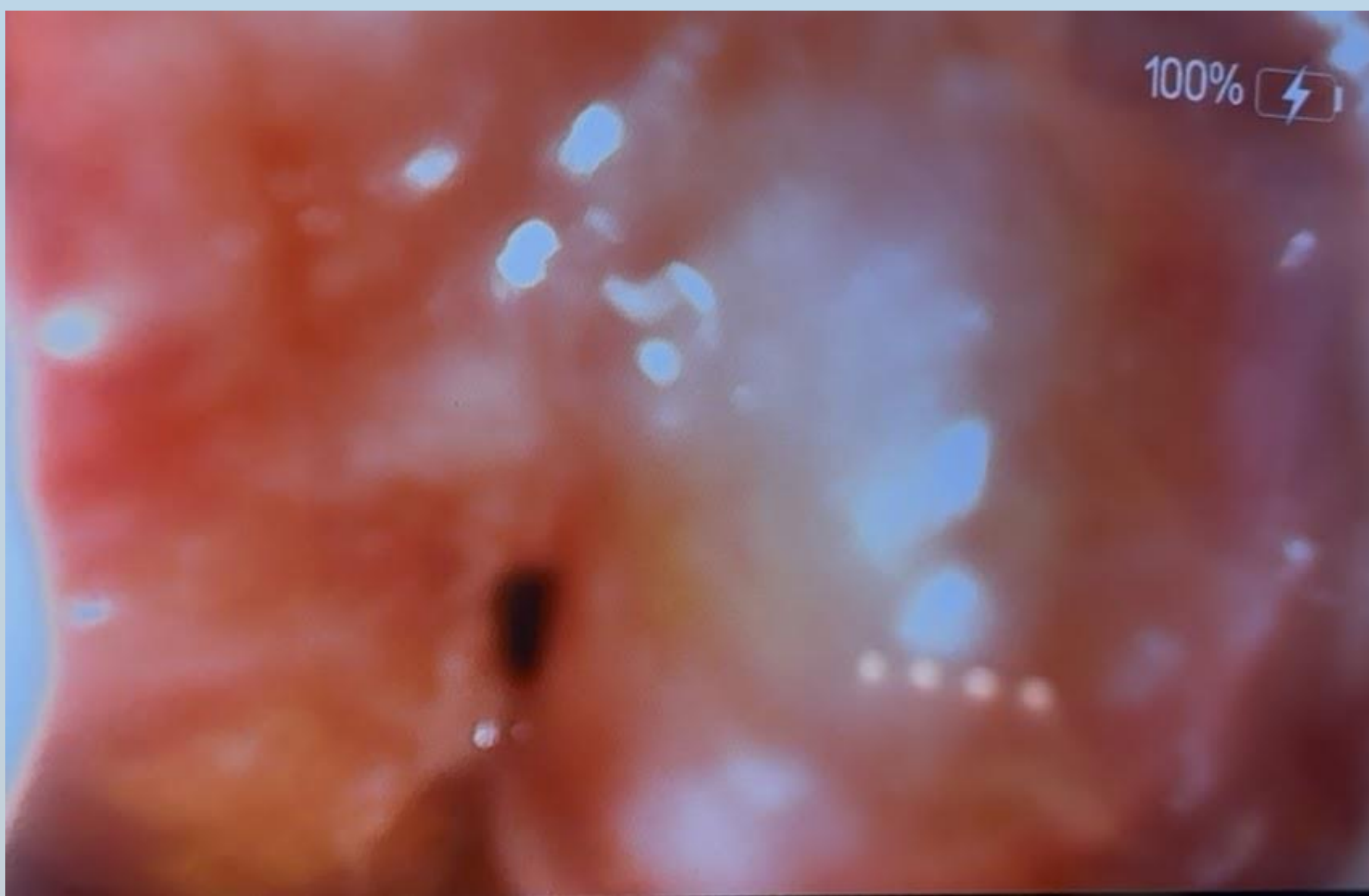


Figure 3. Fiberoptic visualization of epiglottitis

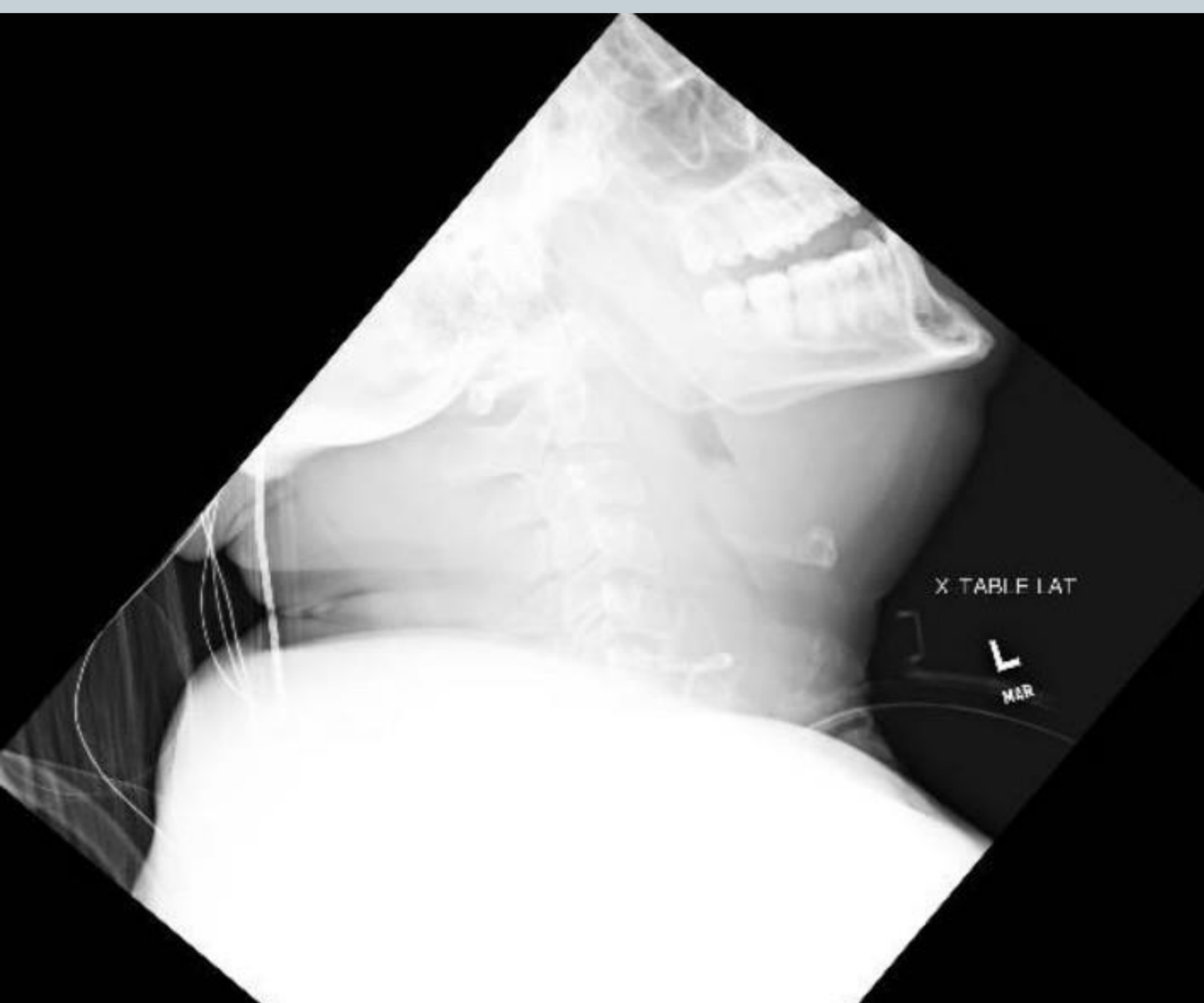


Figure 3. Completely obstructed epiglottitis after cricothyroidotomy

Discussion

Delayed Presentation

- Adult epiglottitis can progress gradually, leading to delayed care.
- Late presentation increases risk of severe obstruction and need for surgical airway [1].

Impact of Super-Super Obesity

- Thick neck tissues obscure airway landmarks and hinder laryngoscopy.
- Reduced functional reserve causes rapid desaturation.
- Difficult mask ventilation and patient positioning further complicate airway management [2].

Cricothyroidotomy as Definitive Rescue

- Intubation attempts failed despite GlideScope and fiberoptic bronchoscopy due to severe epiglottic edema
- Repeated attempts risk worsening swelling and hypoxia.
- Emergent cricothyroidotomy is recommended in CICO scenarios.
- Early transition to a surgical airway improves success and reduces hypoxic injury [4].

Conclusion

This case highlights the life-saving role of cricothyroidotomy in acute upper airway obstruction when conventional airway techniques fail, particularly in patients with super-super obesity. The combination of severe epiglottic swelling, difficult anatomy, and rapid desaturation made early transition to a surgical airway critical. This case underscores the importance of clinician proficiency in cricothyroidotomy and reinforces the need for early recognition and decisive action in airway emergencies.

References

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