

Mandibular Gunshot and the Illusion of a Patent Airway: A Crisis in Seconds

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INTRODUCTION

Penetrating maxillofacial trauma presents some of the most difficult challenges in airway management. Gunshot wounds to the face can rapidly compromise the airway due to bleeding, anatomic distortion, and swelling. Even when a Grade I laryngoscopic view is achieved, distal injuries may prevent successful intubation. This case highlights a young male with a facial gunshot wound complicated by subglottic obstruction, failed intubation, and the need for emergent surgical airway. The case underscores the importance of recognizing hidden airway injuries and emphasizes team communication during high-stakes trauma management.

CASE DETAILS

20-year-old male with gunshot wound (right cheek & mandible) during carjacking attempt

Presentation: awake, whispering, respiratory distress, pale/diaphoretic

Vitals: BP 137/59, HR 120, RR 35, SpO₂ 96% (5 L NC)

Exam:

- Active bleeding/swelling at cheek wound
- Mallampati III view with C-collar
- Blood in oropharynx

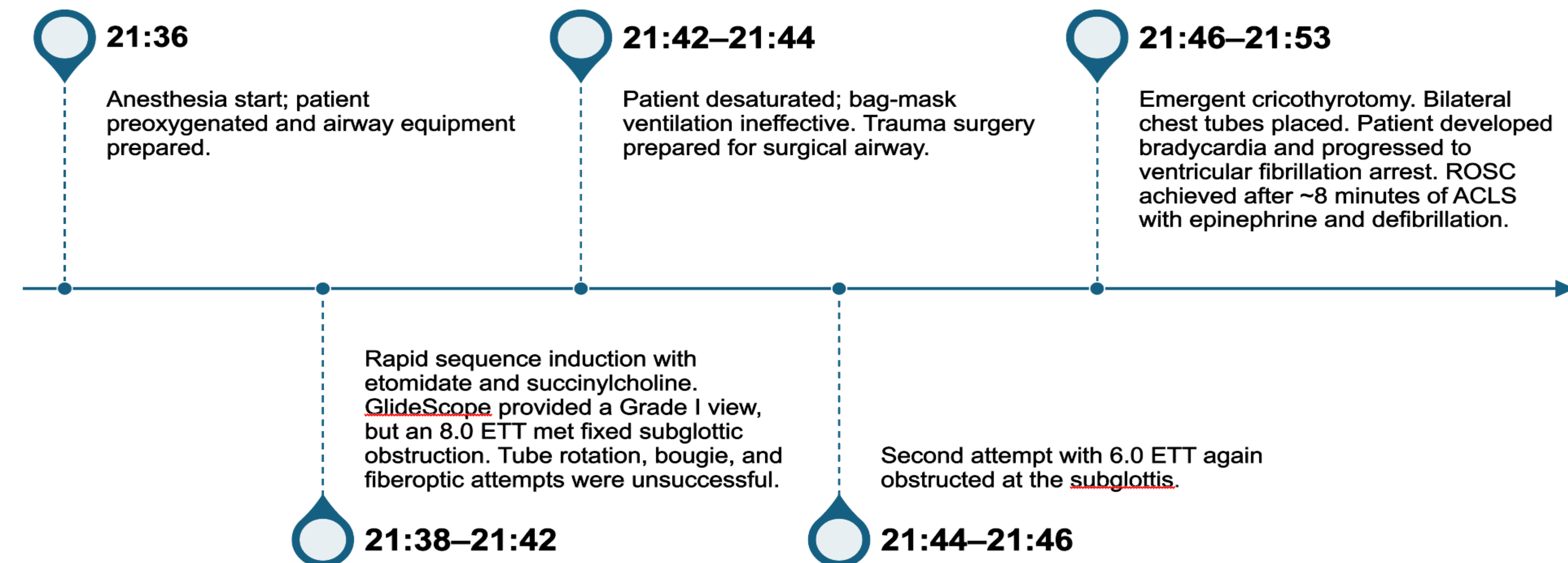
Labs: hypokalemia, elevated lactate, metabolic acidosis

Airway management:

- RSI with etomidate + succinylcholine
- Video laryngoscopy → Grade I glottic view
- 8.0 ETT: cords passed, unable to advance beyond subglottis
- Troubleshooting: rotation, bougie attempts, fiberoptic via tube → all failed (bloody view, fixed obstruction)
- Desaturation → BMV ineffective
- 6.0 ETT: resistance at subglottis

Emergent surgical airway: Cricothyrotomy; placement confirmed (colorimetric + bronchoscopy)

TIMELINE



DISCUSSION

This case illustrates that a good glottic view does not guarantee successful intubation. In this patient, subglottic obstruction from a fractured thyroid cartilage and hematoma prevented tube passage despite multiple techniques. Repeated attempts contributed to hypoxia and cardiac arrest. Penetrating airway trauma is particularly dangerous because anatomical disruption can create false passages and subcutaneous emphysema, both of which complicate airway management.

Guideline-based principles emphasize maintaining spontaneous ventilation when possible, using awake fiberoptic intubation or awake tracheostomy when anatomy is disrupted, and avoiding cricoid pressure or positive-pressure ventilation during induction, as these maneuvers may worsen tissue injury. A critical system issue in this case was that crepitus was documented by emergency and trauma teams but not by anesthesia, delaying recognition of the airway distortion. Earlier recognition of futility and commitment to a surgical airway may have prevented cardiac arrest. In hindsight, an awake tracheostomy or awake fiberoptic approach might have been safer alternatives.

IMAGING

FIGURE 1

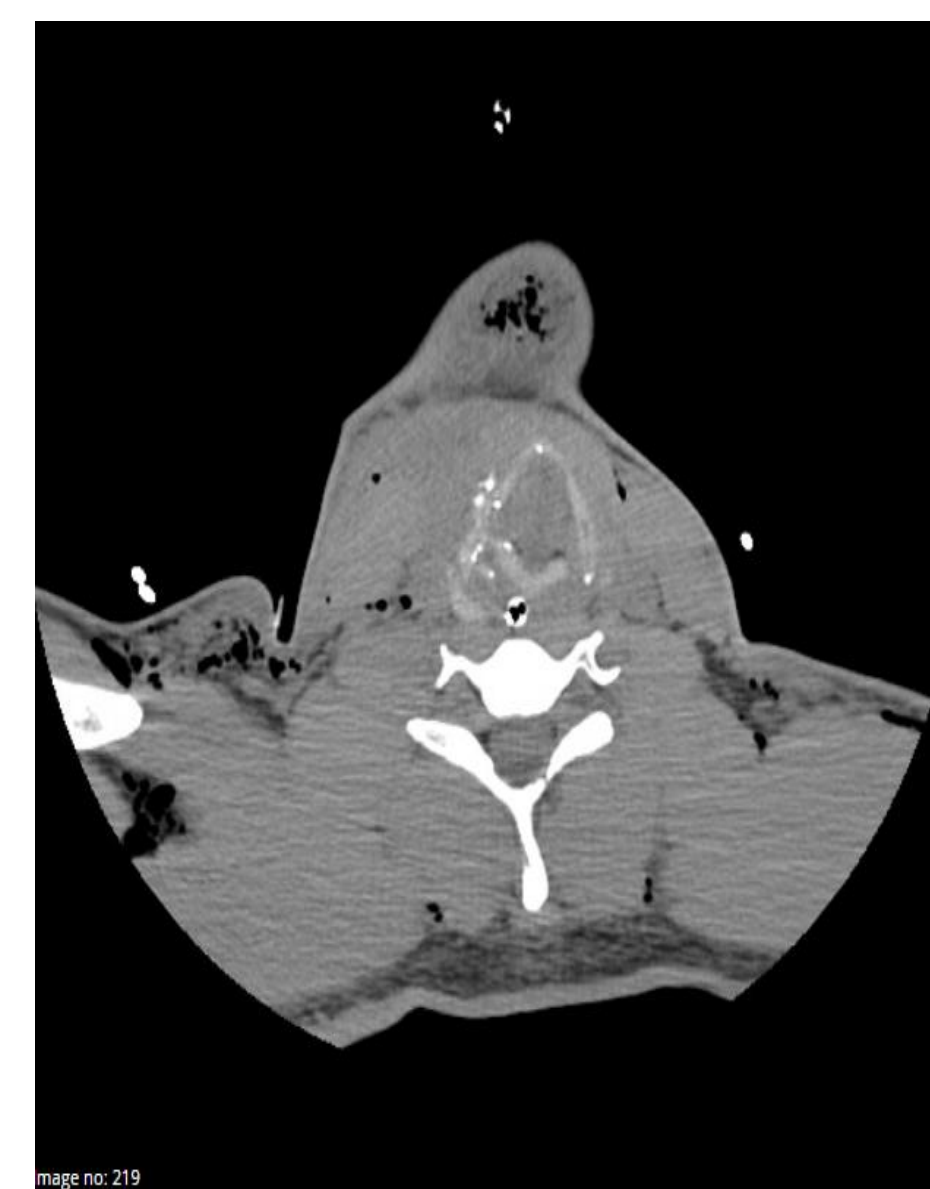


Figure 1. CTA of our patient's airway: Hyperchoic shrapnel visualized around border of thyroid cartilage with complete obliteration of tracheal lumen at level of the hyoid bone

FIGURE 2

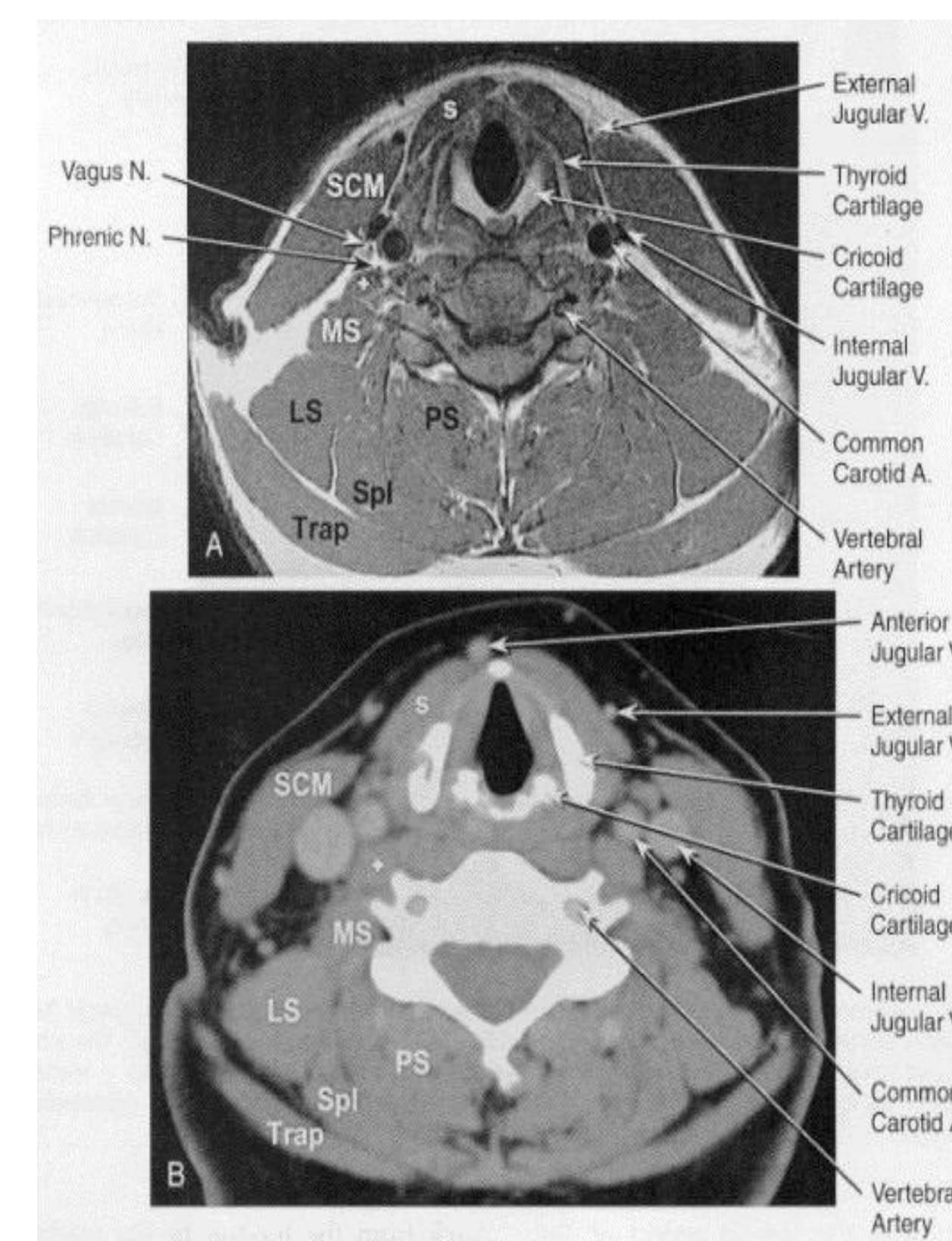


Figure 2. Normal airway CTA

OUTCOME

During cricothyrotomy → hypoxic cardiac arrest (VF)
ROSC after ~8 min CPR + 3 epi + defibrillation
Chest tubes placed for bilateral pneumothoraces

CTA (Figure 1): airway shrapnel with thyroid cartilage involvement and tracheal lumen obliteration

Additional CTA findings:

- Comminuted mandibular fracture
- Thyroid cartilage fracture with hematoma
- Metallic/bony fragments in neck
- Extensive subcutaneous emphysema
- Pulmonary contusions, bilateral pneumothoraces, pneumomediastinum

Reference CTA (Figure 2): normal neck for comparison

Hospital course: transfusion + transfer for multidisciplinary OMFS/ENT care (mandibular ORIF)

6-month follow-up: minimally conscious from anoxic brain injury; decannulated but dependent for ADLs

CONCLUSION

Penetrating facial trauma can conceal distal airway injuries that block intubation even with excellent laryngoscopic views. Early recognition of subglottic obstruction, minimizing repeated failed attempts, and timely escalation to a surgical airway are essential to avoid catastrophic hypoxia. Shared mental models, clear communication, and trauma airway algorithms are as important as technical skills in ensuring optimal outcomes in these complex scenarios.

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