



From Impact to Intubation: Airway Management in Complete Tracheal Transection

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Introduction

Complete tracheal transection usually occurs due to a significant force that disrupts the trachea's structural integrity, leading to potential respiratory distress, subcutaneous emphysema, aphonia, stridor, visible neck bruising, and the loss of palpable landmarks.¹

Case Description

- Middle-aged male sustained complete tracheal transection upon impact with his steering wheel
- Neck bruising, desaturation without respiratory distress, subcutaneous emphysema and inability to phonate
- ETT was advanced through the vocal cords with a nasal fiberoptic technique, but tracheal rings were not visible
- Distal trachea was several centimeters to the left
- Converted to an oral fiberoptic technique
- Primary surgical repair involved a transverse neck incision and advancement of ETT past the point of disruption
- The patient was transferred to the ICU and extubated successfully several days later

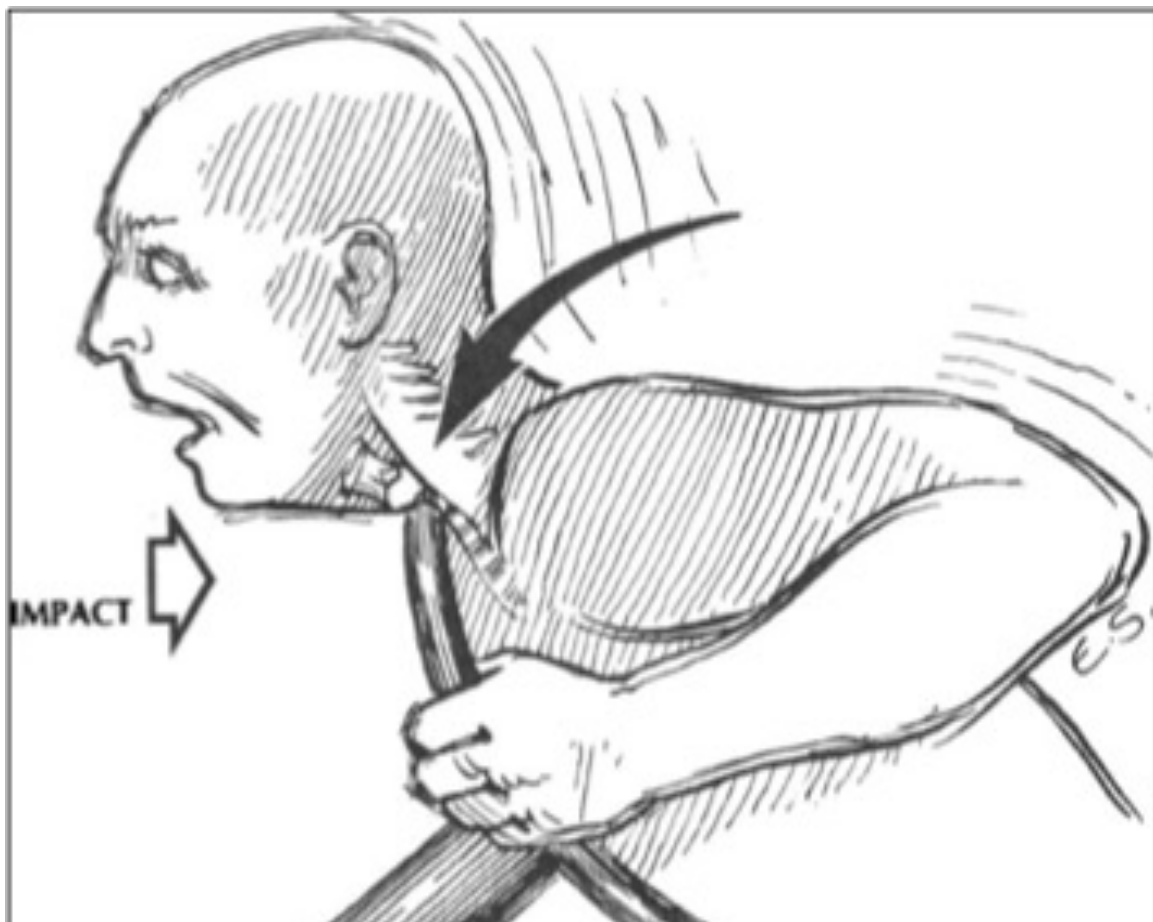


Figure 1: Depiction of mechanism of tracheal transection from impact with the steering wheel

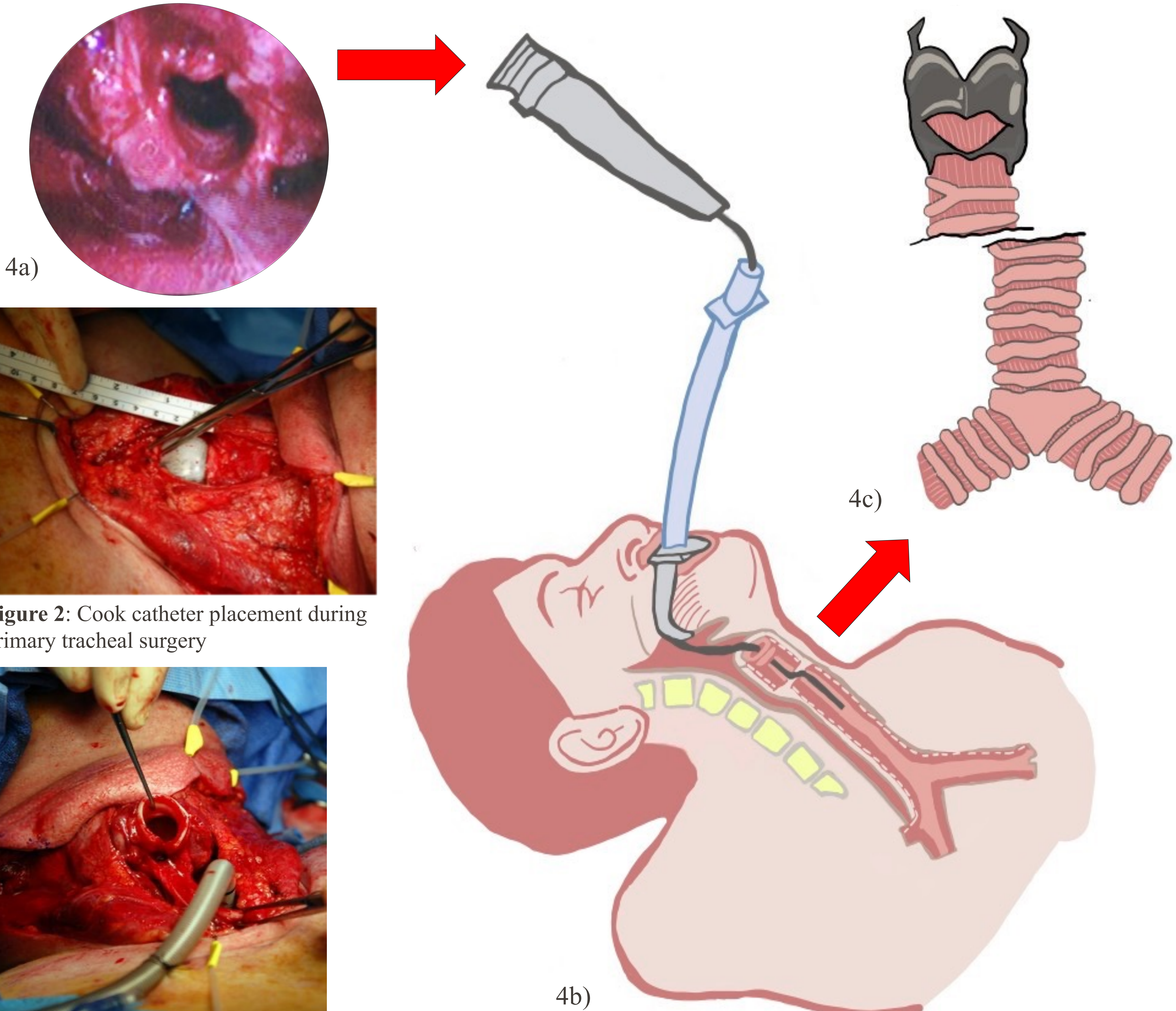


Figure 2: Cook catheter placement during primary tracheal surgery

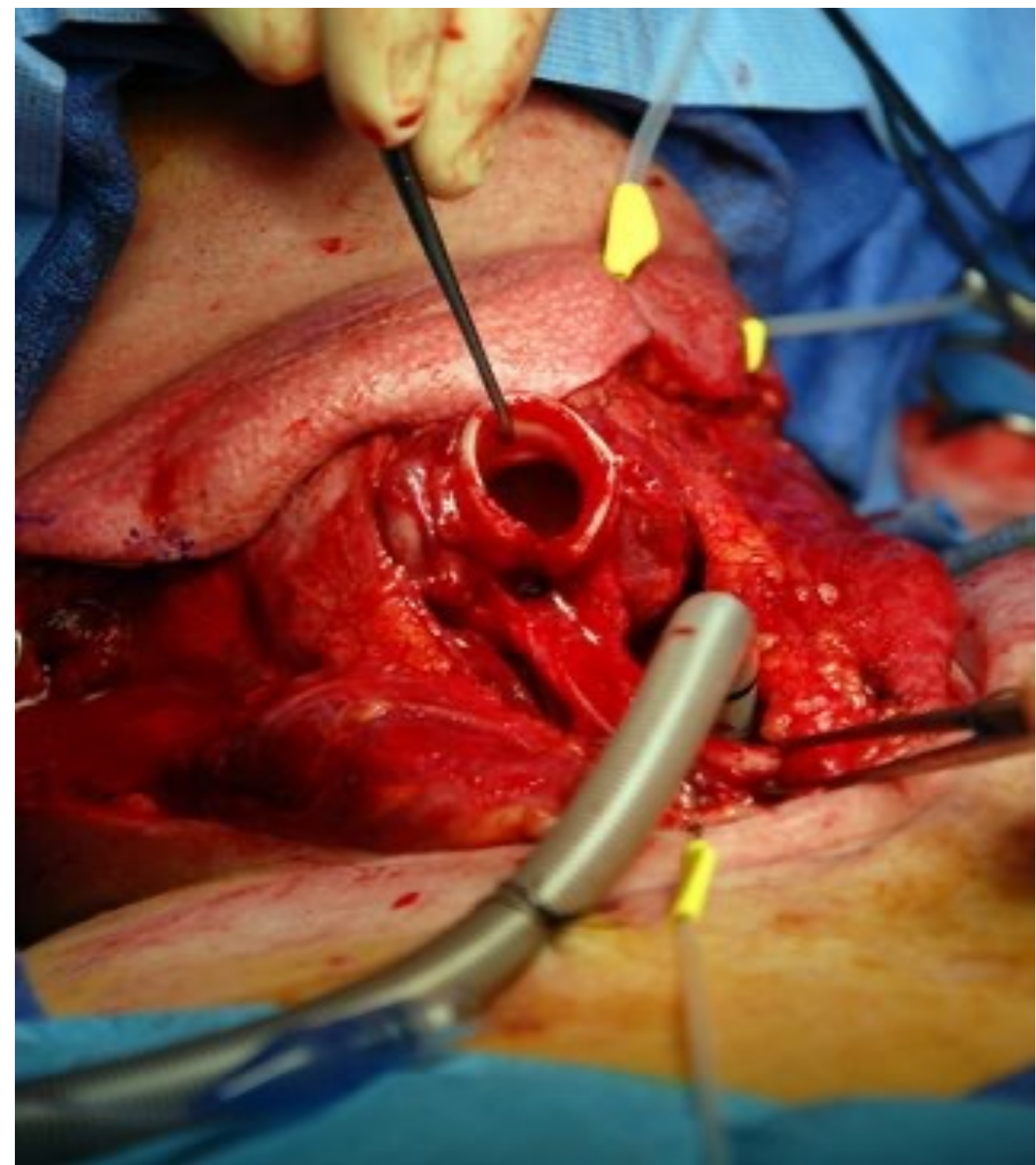


Figure 3: Distal trachea from complete tracheal transection

Figure 4: a) View of the trachea through the oral fiberoptic scope. b) Artist depiction of advancement of ETT cuff past the point of transection. c) Artist depiction of transected trachea from the coronal plane.

Discussion

- Clinical presentation from a transection varies and can include desaturation, subcutaneous emphysema, aphonia, and visible neck bruising.¹
- Symptoms are common in other similar injuries, such as a tracheobronchial tear, decreasing the likelihood of swift and accurate recognition.²
- Final diagnosis relies on imaging modalities which can reveal pneumomediastinum, pneumothorax, and tracheal displacement.³
- Initial nasal fiberoptic intubation failed because the tracheal displacement required a longer scope length.
- The patient's C-collar, inability to phonate, obesity, and short thyromental distance made him a good candidate for fiberoptic intubation as opposed to direct laryngoscopy.
- Rapid diagnosis and securing the airway are crucial.
- Ongoing monitoring for potential complications is essential.

Conclusion

This case report underscores the importance of a coordinated and adaptable approach in managing severe tracheal injuries. The successful outcome was achieved through meticulous airway management, timely surgical and anesthetic intervention, and comprehensive postoperative care.

References

