



## Introduction

Laryngeal fractures, although rare, are potentially life-threatening due to the risk of airway compromise, necessitating immediate and accurate diagnosis. Focused airway POCUS offers a rapid bedside assessment tool for suspected laryngeal trauma in the emergency department.

## Case Presentation

A 58-year-old male presented to the ED following an alleged assault, during which he was punched in the neck. He complained of hoarseness of voice, difficulty swallowing, and neck pain. On examination, he was hemodynamically stable, not in respiratory distress, and exhibited anterior neck bruising, tenderness, and a soft voice. He had no palpable neck crepitus or stridor. Airway POCUS revealed an undisplaced fracture of the thyroid cartilage (Figure A) with normal vocal cord movements. A CT neck confirmed a midline thyroid cartilage fracture (Figure B), and flexible nasopharyngoscopy showed mild laryngeal edema without vocal cord injury. The injury was classified as Schaefer grade 2. The patient was admitted for observation and treated with intravenous dexamethasone, anti-reflux, analgesia, and voice rest.

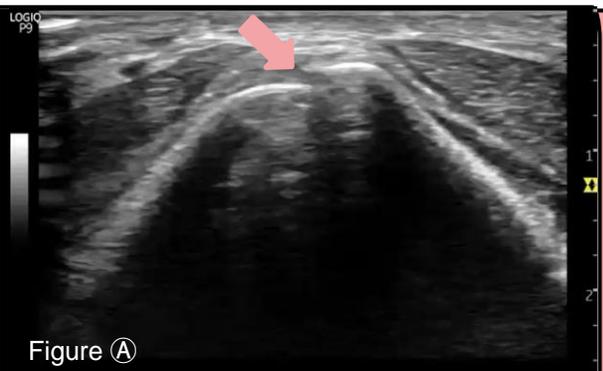


Figure A

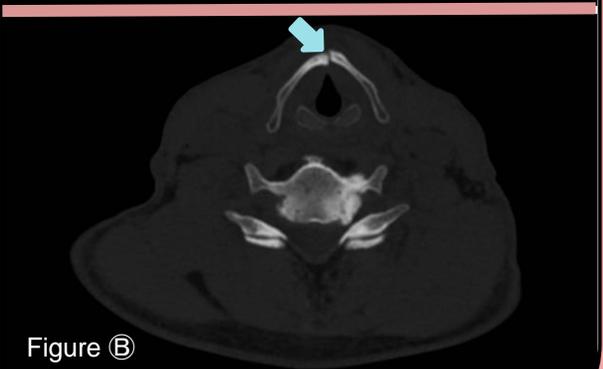


Figure B

## Discussion

While CT neck remains the gold standard for imaging laryngeal trauma, airway POCUS provides real-time upper airway assessment, allowing: ① visualization of thyroid or cricoid cartilage fractures, ② endolaryngeal hematomas or edema evidenced by disruption of air-mucosal interface or surrounding mixed echogenicities, and ③ vocal cord movement abnormalities. This facilitates early recognition of life-threatening airway injuries and timely intervention. Studies demonstrate good correlation between airway POCUS findings and CT imaging, as well as between preoperative airway POCUS and laryngoscopic assessments of vocal cord movement. Recent research also propose that airway POCUS findings can be aligned with the Schaefer Classification System for laryngeal trauma, supporting its integration into clinical practice.

## Conclusion

Incorporating airway POCUS into the evaluation of blunt neck trauma:

- ① enhances triaging,
- ② accelerates clinical assessments,
- ③ facilitates early diagnosis, and
- ④ informs airway management plans.

This approach is particularly valuable in resource-limited settings or when transferring patients to CT imaging is unsafe due to a high risk of airway catastrophe.

### References

1. Adi O, et al. Novel role of focused airway ultrasound in early airway assessment of suspected laryngeal trauma. *Ultrasound J.* 2020 Aug 12;12(1):37.
2. Cheng SP, et al. Preoperative ultrasonography assessment of vocal cord movement during thyroid and parathyroid surgery. *World J Surg* 36:2509–2515 (2012)

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