

Silent Swelling: A Case of Angiotensin Converting Enzyme Inhibitor Induced Upper Airway Angioedema

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Abstract

Background: ACE inhibitor (ACEi) – induced angioedema is rare but potentially life-threatening and may occur after years of uneventful use.

Case: A 66 year old woman on chronic lisinopril developed acute inspiratory stridor and respiratory distress 15 minutes post extubation after an uneventful outpatient D&C under general anesthesia. Initial albuterol was ineffective. Fiberoptic laryngoscopy showed isolated epiglottic and vallecular edema with normal cords/arytenoids. She received nebulized racemic epinephrine ×3, dexamethasone, tranexamic acid (1 g), and was observed for 23 h. Repeat airway exam showed resolution and she was discharged next day. Lisinopril was discontinued with counseling on ACEi-induced angioedema.

Conclusion: Consider ACEi-induced angioedema in postoperative respiratory decompensation. Early bedside fiberoptic evaluation and stopping the ACEi are key to prevent airway compromise.

Introduction

- ACEi's provide proven cardiometabolic benefit but can rarely cause bradykinin mediated angioedema (<1% incidence).
- Presentation ranges from facial/oropharyngeal swelling to upper airway obstruction.
- Post-extubation symptoms may mimic laryngospasm, anaphylaxis, aspiration, or mechanical trauma, delaying diagnosis.
- This case features isolated epiglottic edema immediately after extubation and highlights the value of early fiberoptic airway assessment.

Case Presentation

Patient: 66-year-old African American woman with HTN on lisinopril; scheduled outpatient D&C for abnormal uterine bleeding.

Pre-op + Anesthetic: No prior anesthetic complications; >4 METs; ASA III. Airway: Mallampati III, adequate thyromental distance, full ROM. Switched from MAC to general anesthesia due to body habitus. Standard IV induction; Uneventful extubation; speaking full sentences on exit to PACU.

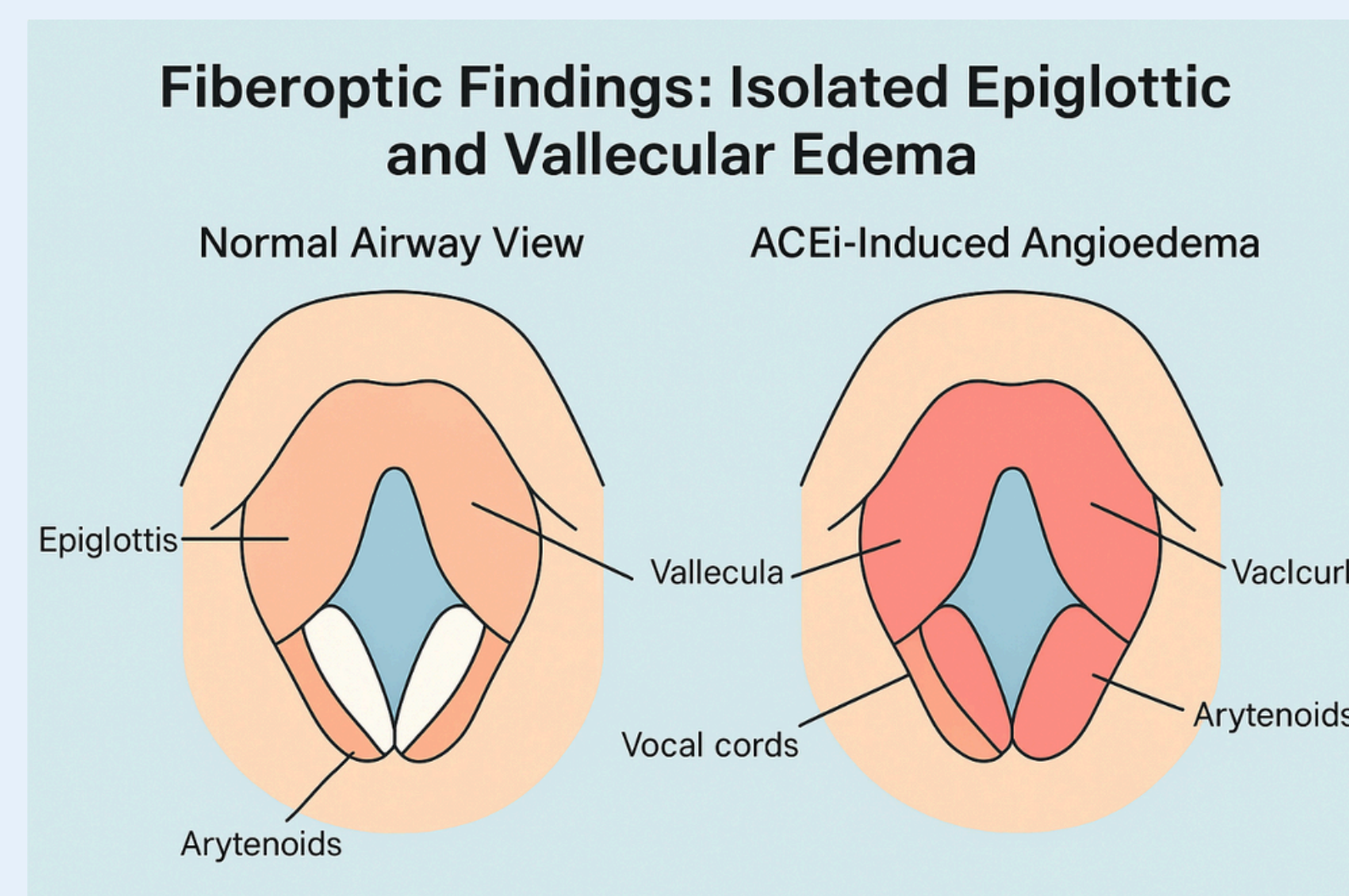
Deterioration (15 min in PACU): Inspiratory stridor, dyspnea, respiratory distress. Albuterol ineffective.

Airway exam: Flexible fiberoptic showed isolated edema of epiglottis + vallecula; normal vocal cords & arytenoids.

Treatment: Racemic epinephrine nebulizers ×3, dexamethasone, tranexamic acid 1 g → sustained relief.

Course: Transferred to main PACU for close observation. Repeat laryngoscopy (≈4 h): resolution of edema. Observed 23 h, discharged next day.

Disposition: Lisinopril discontinued; counseling to avoid ACEis; PCP follow-up arranged.



Management

1. Protect airway / monitor closely (early anesthesia involvement).
2. Discontinue ACEi immediately.
3. Therapies used here: racemic epinephrine ×3, dexamethasone, TXA 1 g.
4. Consideration (institution-dependent): icatibant or C1-esterase inhibitor for bradykinin-mediated cases.
5. Observe 23–24 h; repeat airway assessment prior to discharge; patient education on recurrence risk.

Discussion

- Incidence 0.1–0.7% among chronic ACEi users.
- Mechanism: impaired bradykinin degradation ^{1,2} → vascular permeability → submucosal edema.
- Risk factors: female sex, age > 65, African American race, smoking history (patient had ¾).
- Post-op respiratory symptoms can be subtle; bedside fiberoptic exam distinguished angioedema from post-intubation trauma (isolated epiglottic edema with normal cords/arytenoids).
- Conventional therapies (steroids, antihistamines, epinephrine) may be variably effective in bradykinin mediated disease, however this case improved with racemic epinephrine + TXA + steroids (suggests mixed mechanism/partial responsiveness).
- Icatibant can shorten symptom duration but availability varies.
- Avoid re-exposure: document ACEi as an allergy; consider ARB if indicated. ^{3, 4, 5, 6}

Key Takeaways

- Keep ACEi-angioedema on the post-extubation differential.
- Early fiberoptic airway visualization clarifies diagnosis and guides care.
- Stop the ACEi immediately; educate patient about recurrence risk.
- Conventional therapies may help, but bradykinin-targeted options (e.g., icatibant) should be considered per resources.
- Observation and repeat airway exam before discharge improve safety.

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