



Angioedema Leading to a Complicated Slash Tracheostomy status post PFO closure

ALBANY MEDICAL COLLEGE

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Hannah Soliman, BA¹; Zach Nylund, BS¹; Christina Parducci, DO²; Tanya Richvalsky, DO²; Maksim Merakhovich, MD²

¹Albany Medical College, ²Albany Medical Center, Department of Anesthesiology

Introduction

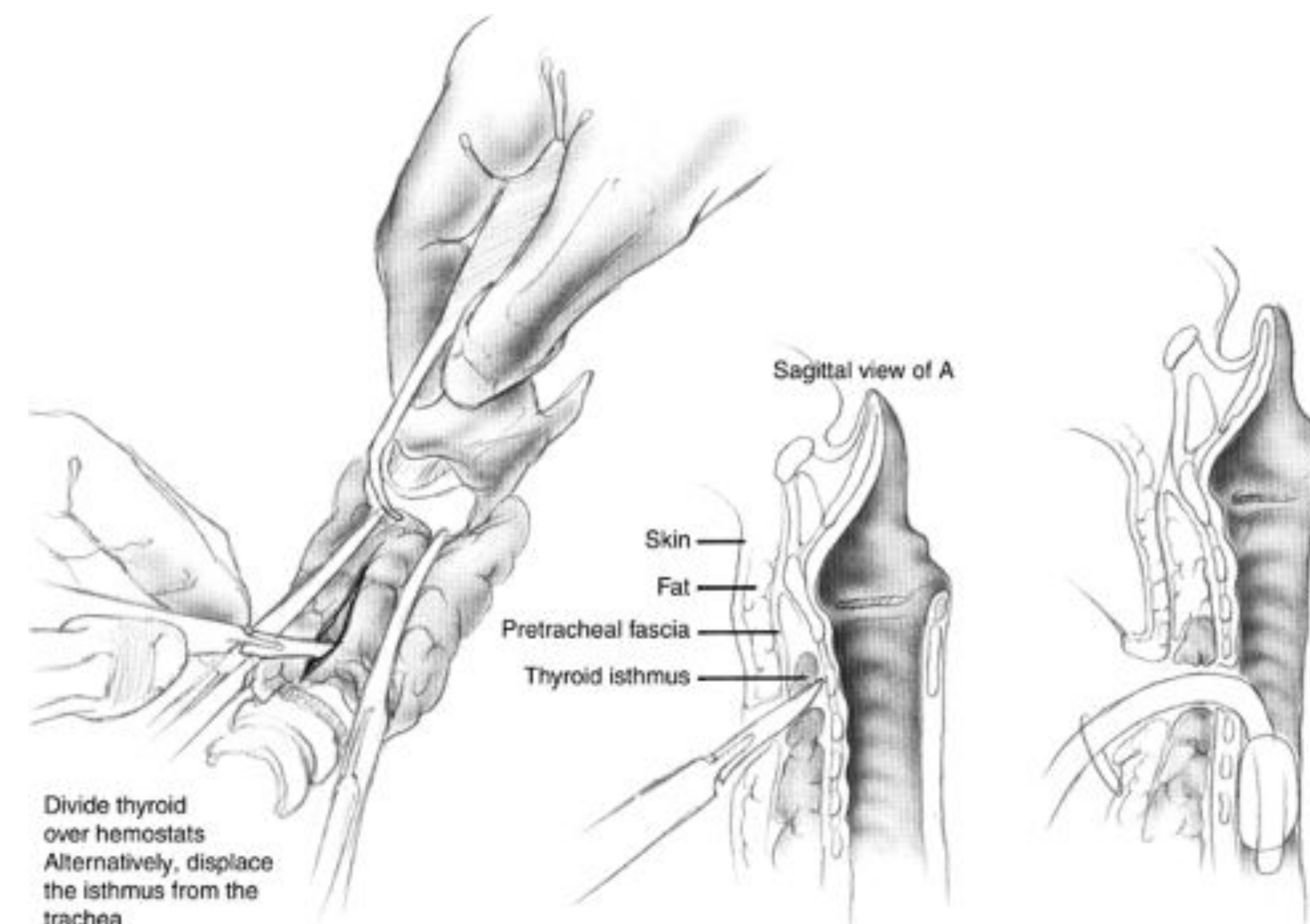
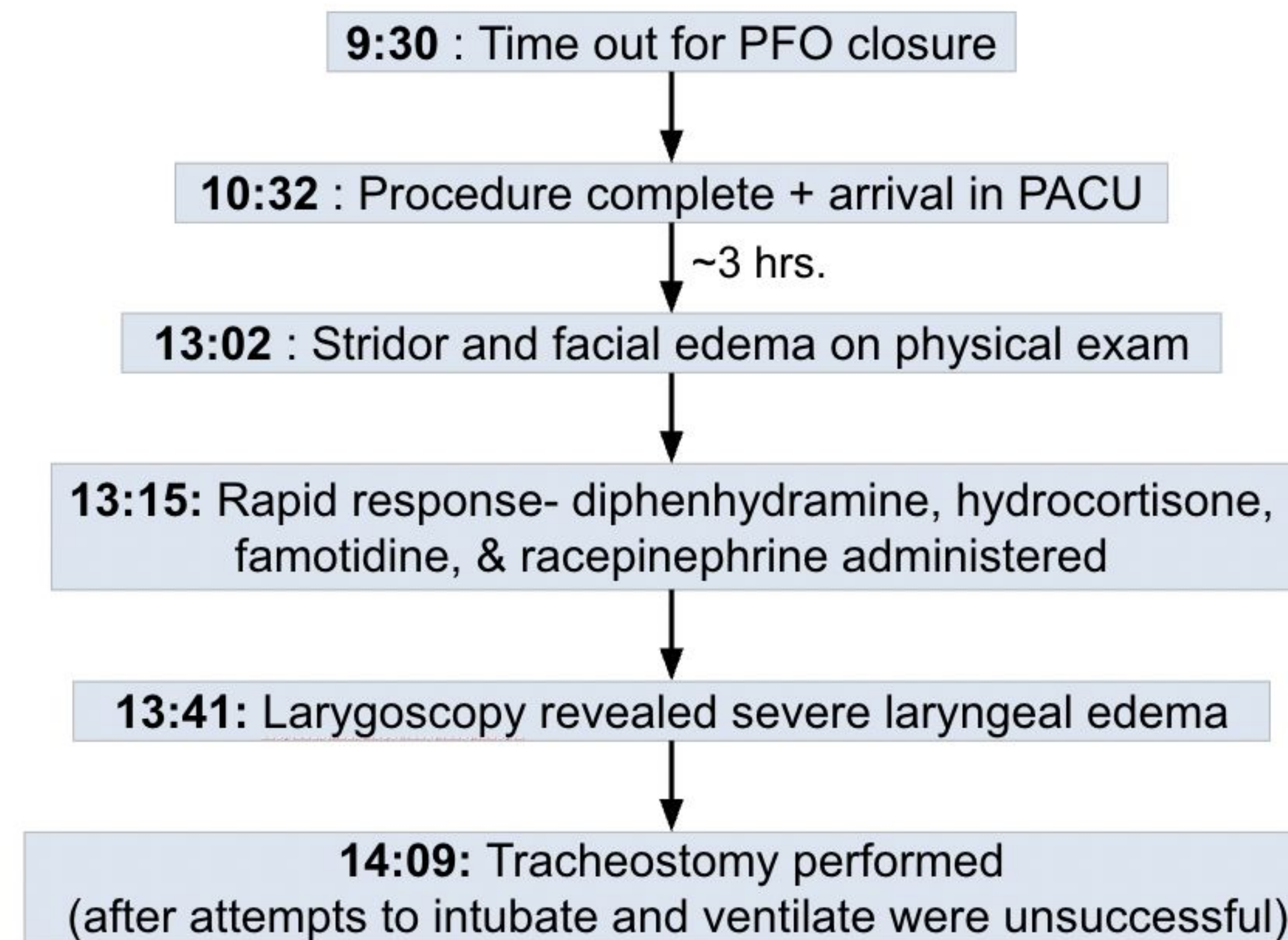
- Angioedema is a rare but potentially fatal perioperative complication characterized by rapid upper airway swelling and possible obstruction.¹
- Common triggers include allergic reactions, hereditary causes, or medications.¹
- Post-operative cases have been reported following cardiac procedures. Patent foramen ovale (PFO) closure is usually low-risk.^{2,3}
- Rarely, PFO closure may trigger angioedema through hypersensitivity to nickel-based occluder devices.^{2,3}
- It is critical to immediately assess airway patency and be prepared for early intubation or surgical airway intervention if there are signs of airway compromise.
- Airway protection is the priority in angioedema, which is medically managed with epinephrine, antihistamines, and steroids.⁴

Case Description

A 73-year-old woman underwent an uncomplicated elective PFO closure for cryptogenic stroke. Three hours postoperatively, she developed sudden shortness of breath, stridor, and neck swelling without rash. Despite treatment with diphenhydramine, epinephrine, and steroids, her respiratory distress worsened. The otolaryngology team performed nasal endoscopy, revealing severe tongue, arytenoid, and pharyngeal swelling. The patient was taken emergently to the OR, where several intubation attempts, including fiberoptic, failed due to airway edema and bleeding. With worsening respiratory failure and unsuccessful mask ventilation, an emergency slash tracheostomy was performed.

Pertinent PMHx: No recorded allergy to nickel, no prior history of angioedema

Treatment Course



Discussion

Angioedema, swelling of the deeper skin layers, typically affecting soft tissues, is uncommon in the perioperative setting. When present, it can lead to life-threatening airway obstruction. Triggers include allergic reactions, hereditary angioedema, or adverse drug effects.^{5,6}

A rare link between post-operative angioedema and PFO closure has been suggested, particularly involving nickel-based devices. The RISE study proposes that systemic hypersensitivity may result from intravascular nickel exposure.²

In our case, the patient exhibited stridor and drooling, and the physical exam raised strong suspicion for angioedema, later confirmed by laryngoscopy. Early recognition by the anesthesiologist enabled a coordinated, multidisciplinary response. The patient was safely transported to the operating room, where, after exhausting airway interventions, ENT successfully performed an emergency tracheostomy. This timely response likely saved the patient's life. This case highlights the importance of early identification and prompt management of angioedema in the post-operative setting.

Conclusion

This case underscores the need for vigilance in identifying rare post-operative complications, such as angioedema, following otherwise routine procedures like PFO closure. The case also highlights an unconventional timeline and presentation for the reaction. Awareness of potential nickel hypersensitivity reactions, rapid recognition of airway compromise, and immediate multidisciplinary intervention are critical to preventing fatal outcomes. Early diagnosis and decisive airway management remain the cornerstone of successful treatment in perioperative angioedema.



References