Angiotensin-converting Enzyme Inhibitor–mediated Angioedema

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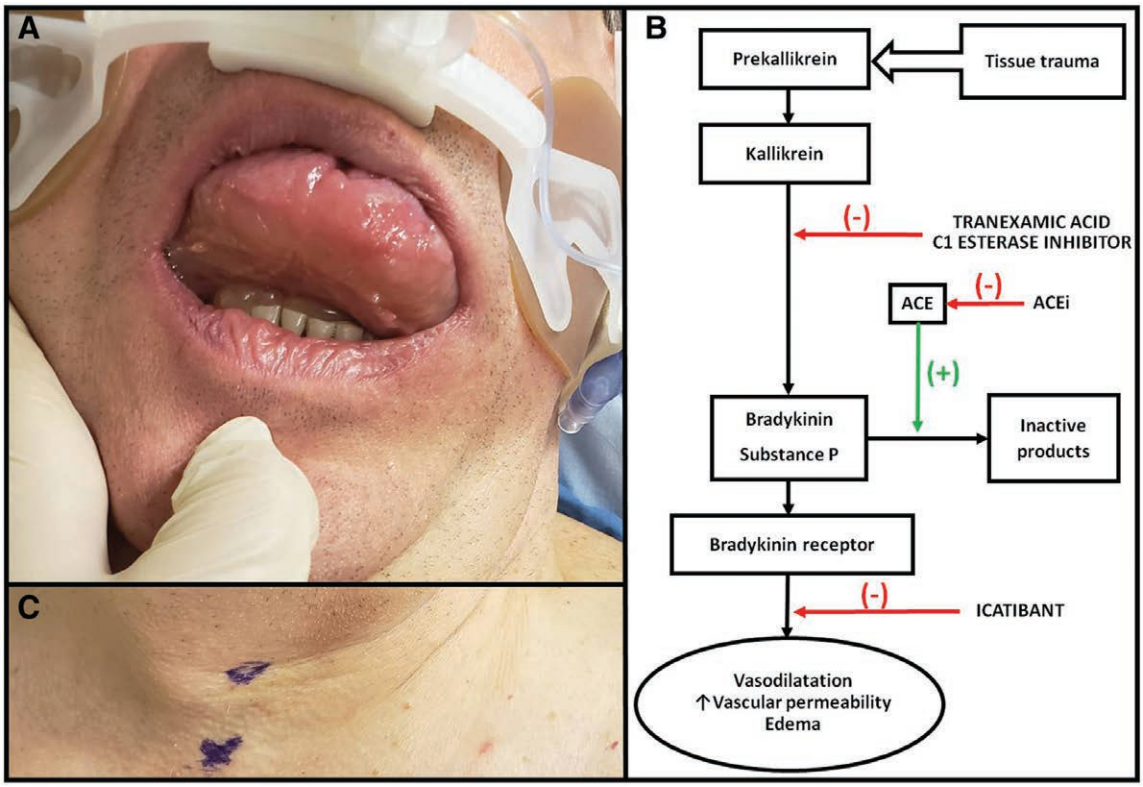

Angiotensin-converting enzyme inhibitor–mediated angioedema is the most common cause of angioedema and accounts for one-third of emergency department visits for angioedema. Nonpitting edema of the face, lips, tongue, and supraglottic/glottic structures may be present, with 9.5 to 15% of patients requiring emergency airway management.[1,2] When respiratory difficulties are present, mortality rate is 11%.[3] Angiotensin-converting enzyme inhibitor–mediated angioedema can be unprovoked or triggered by trauma, including dental and head and neck procedures, by endotracheal intubation,[3] or after a mildly traumatic laryngeal mask airway insertion for a short procedure (presenting in our case as slurred speech and tongue swelling [panel *A*] 5 h after laryngeal mask airway removal). Local accumulation of bradykinin attributable in part to inhibition of degradation by angiotensin-converting enzyme (panel *B*) leads to tissue swelling. Unlike allergy-histamine-mediated angioedema, angiotensin-converting enzyme inhibitor–mediated angioedema is not associated with pruritis, rash, hypotension, and bronchospasm. As such, antihistamines, steroids, and epinephrine are unlikely to be effective. Plasma transfusion, C1-inhibitor replacement protein, antifibrinolytics, and icatibant, a selective bradykinin β_2-receptor antagonist, have shown promising efficacy. Angiotensin-converting enzyme inhibitor–mediated angioedema risk factors include ethnicity (people of African descent and Hispanics have a higher incidence than Caucasians), women, smoking, elderly, history of drug rash, seasonal allergies, and use of immunosuppressants. Recurrence rates are high with increasing severity, thus angiotensin-converting enzyme inhibitor use must be discontinued. Attacks are self-limiting, lasting 48 to 72 h.

When respiratory distress is present/imminent, orotracheal intubation may be difficult because of tongue

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swelling (panel *A*). Preparation for front-of-neck airway, including marking of the cricothyroid membrane (panel *C*) and calling for otolaryngologic support, should be made while an emergency nasotracheal intubation is carried out. In our case, the epiglottis and larynx were not swollen.

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Competing Interests

The authors declare no competing interests.

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