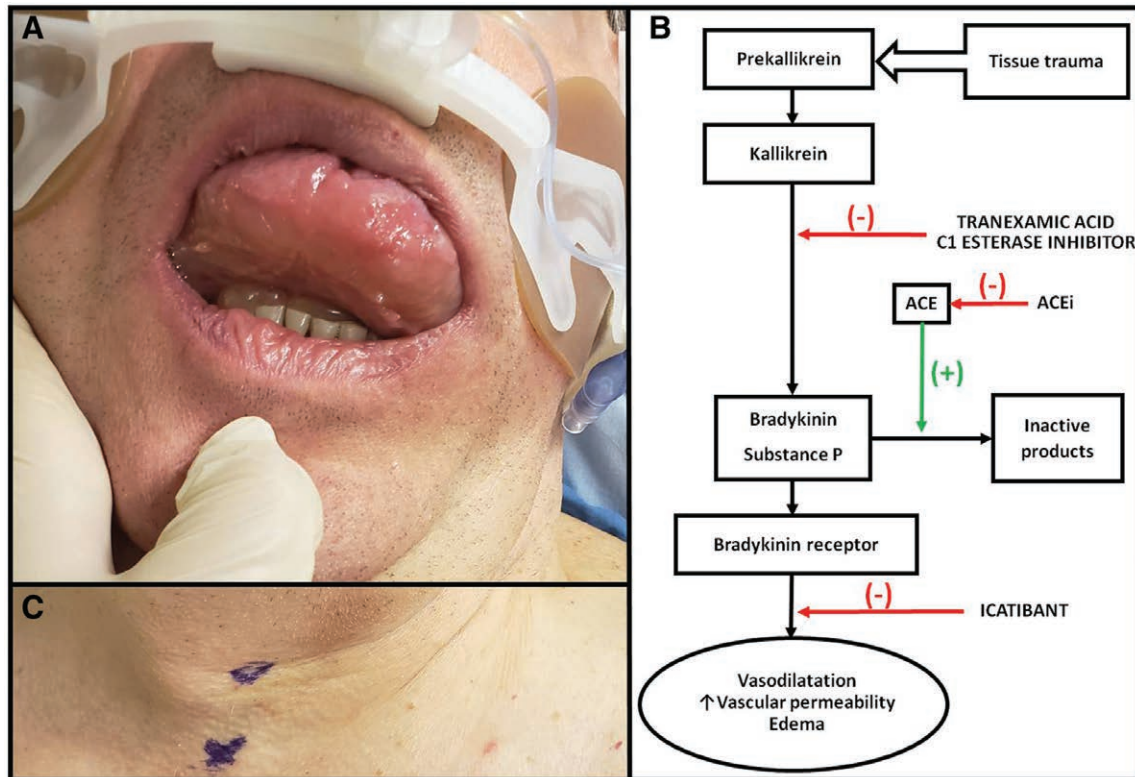


Angiotensin-converting Enzyme Inhibitor–mediated Angioedema

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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 ica-tibant, 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, oro-tracheal intubation may be difficult because of tongue

Published online first on May 3, 2021. From the Department of Anesthesiology and Perioperative Medicine, Queen's University, Kingston, Ontario, Canada.

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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.

Acknowledgments

The authors acknowledge Emily Cook, M.D., and Joanna Dion, M.D., F.R.C.P.C., Department of Anesthesiology and Perioperative Medicine, and Jason A. Beyea, M.D., Ph.D., F.R.C.S.C., Division of Otolaryngology-Head and Neck Surgery, Queen's University, Kingston, Ontario, Canada, for their assistance with the figure and patient care.

Competing Interests

The authors declare no competing interests.

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