

## Clinical Image

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# A rare case of angiotensin-converting enzyme inhibitor-induced unilateral tongue angioedema

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### Abstract

Angiotensin-Converting Enzyme Inhibitors (ACEI) are commonly used to prevent cardiac remodeling in patients with ST-Segment Elevation Myocardial Infarction (STEMI). Life-threatening ACEI side effects, such as angioedema, are rare; unilateral tongue swelling is even rarer. Early recognition and diagnosis of angioedema can often be life-saving.

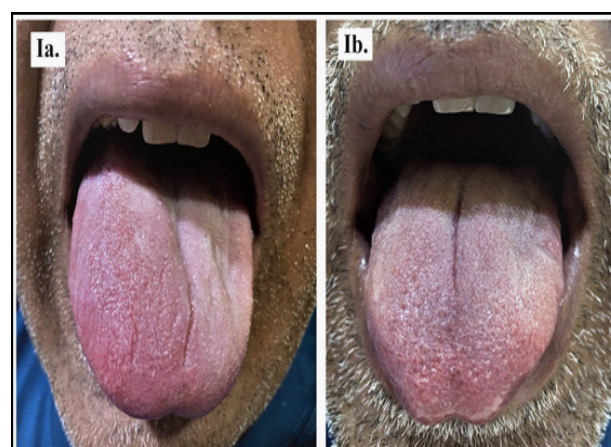
**Keywords:** Unilateral tongue angioedema; Angiotensin converting enzyme inhibitor.

**Abbreviations:** ACEI: Angiotensin Converting Enzyme Inhibitor.

### Case details

A 51-year-old man with hypertension and diabetes mellitus presented with an inferior wall myocardial infarction, for which primary percutaneous intervention was done. Post-procedure, the patient was hemodynamically stable and was started on aspirin, clopidogrel, metoprolol, ramipril, and insulin. On the third day after initiation of ramipril, the patient observed difficulty speaking due to unilateral tongue swelling (Figure 1a). He denied any hives, lip swellings, flushing, facial swelling, increasing shortness of breath or stridor and having ever experienced food, drug allergies or asthma. He refuted ever having angioedema or a related symptom. The physical and systemic examinations were normal. With a provisional diagnosis of ramipril-induced angioedema, the ramipril was stopped and clinically observed in the ICU. After 48 hours, the tongue swelling resolved spontaneously (Figure 1b), and the patient was counseled to discontinue the ACEI.

Unilateral tongue angioedema caused by ACEI is extremely rare. It is caused by increased levels of angiotensin I and bradykinin, both of which cause vasodilation and swelling [1]. Al-



**Figure 1:** (a) showed right-sided unilateral angioedema, and Figure (b) showed complete resolution of angioedema.

though it is unknown why oedema occurs only unilaterally, it has been speculated that unilateral oedema may have been the precursor to bilateral and fulminant angioedema. Corticoste-

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roids and antihistamines have little effect in the treatment of ACEI-induced angioedema, as the culprit here is bradykinin, not histamine [2]. It is imperative that physicians and cardiologists promptly recognize the rare occurrence of unilateral tongue angioedema as a side effect of ACEI to avoid life-threatening events.

#### **Declarations**

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**Consent for publication:** The patient's consent for publication was obtained.

**Competing interests:** The authors have no competing interests to declare.

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