

# Stop antihypertensive to avoid intubation?

A unique case of losartan induced isolated angioedema of the respiratory tract.

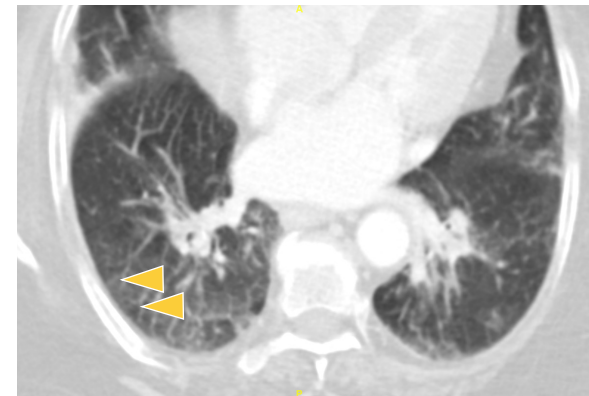
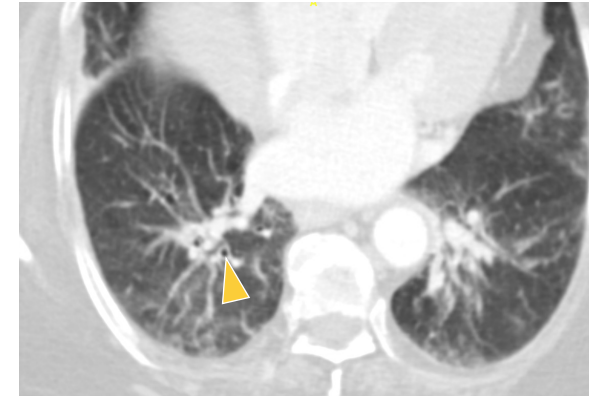
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## Introduction

Angiotensin-converting enzyme inhibitors (ACE-is) and angiotensin receptor blockers (ARBs) are among the most widely used drugs that cause angioedema. One-third of all emergency department visits for angioedema is due to the use of ACE-is and ARBs. Angioedema is characterized by the occurrence of ill-defined pale, non-pruritic, non-pitting edema of the subcutaneous and submucosal tissues that involve the lips, face, neck, extremities, and visceral organs. It occurs more often in older individuals, African Americans, smokers, women, and patients with a history of drug rash, seasonal allergies, and the use of immunosuppressive therapy. It can happen any time during the treatment; however, the risk is higher in the first few months of initiating the medication. Angioedema involving the viscera alone is rare and poses a diagnostic challenge requiring a high index of suspicion. The involvement of viscera (intestines) can present as an acute abdomen, whereas angioedema of the respiratory tract can present as respiratory failure. Respiratory failure resulting from isolated lower respiratory mucosal involvement without apparent facial swelling is a unique presentation. We present a case of acute respiratory failure in a patient on losartan therapy whose ongoing respiratory symptoms improved after discontinuation of losartan.

## Case Presentation

An 80-year-old Asian female was admitted to the hospital with difficulty breathing, cough, and wheezing for two weeks. She had denied any respiratory problems before the current episode. She had hypertension and hypothyroidism and was on losartan for the past year. On admission to the hospital, she was in mild respiratory distress, which progressed to acute respiratory failure requiring emergent intubation within a few hours. Her initial labs, including white cell count, were unremarkable. CT of chest and neck revealed submucosal edema of the nasopharynx, oropharynx, palate, tonsils, and uvula. Weaning from the mechanical ventilator in the next few days was challenging, requiring multiple attempts at extubation. After extubation, she continued to experience wheezing episodes, which were new to her. The patient had finished a course of antibiotics, received steroids, and bronchodilator therapy with minimal recovery. Despite



all efforts, she continued to be wheezing and dyspneic. Her losartan was then discontinued for concerns of angioedema of the respiratory tract. She then showed substantial symptomatic improvement with the resolution of the wheeze. The improvement of her symptoms makes ARB induced angioedema of the respiratory tract the most likely diagnosis of her respiratory failure.

## Discussion

There are no routine laboratory tests to help diagnose ARB induced angioedema. Moreover, although angioedema may occur during the first week of treatment, some patients may have been on an ARB without any problems for months before they develop symptoms of angioedema. ACE-is and ARBs are often overlooked as an etiology of angioedema, and this might lead to adverse outcomes, as continued administration tends to result in further severe attacks. The first and most simple step in the management of angioedema is the immediate discontinuation of the drug. There are no specific therapies for ACE-i/ARB induced angioedema. Many practicing physicians are unaware of the possibility of isolated respiratory tract involvement. Thus a high index of clinical suspicion is needed to make the diagnosis to prevent patient suffering, unnecessary interventions, and recurrent hospitalizations.