

Lisinopril Induced Angioedema Requiring Emergent Cricothyrotomy

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ABSTRACT:

While ACE inhibitors are one of the most frequently prescribed medications in the United States, they can have serious side effects. A 49-year-old Caucasian male presented to Kent Hospital Emergency Department with a chief complaint of shortness of breath. The patient described a sensation “of something stuck” in his throat. He had this symptom for approximately three hours and denied any recent meals. The patient denied any trauma to the area, and was very specific as to the location of the sensation – the right anterior side of his neck at the approximate level of the C4 vertebrae. The sensation was worsened by attempts to swallow, and it was not relieved by any actions the patient attempted. The patient had never encountered symptoms such as these in the past. The patient was an obese male with a past medical history of hypertension, anxiety and depression, and obstructive sleep apnea. He was prescribed captopril/HCTZ and lisinopril. The patient had lisinopril added to his medication regime three months prior to presentation. The patient also has a prior substance abuse problem and was taking buprenorphine and naloxone. His allergies to medications included penicillin and sulfa medications. The patient uses alcohol and tobacco on a daily basis. He denied any other symptoms besides shortness of breath and a feeling of something stuck in his throat. On physical exam, the patient’s vital signs are within normal limits with the exception of mild tachycardia of 115bpm, an elevated blood pressure of 181/92mmHg, and an oxygen saturation level of 95% on room air. The patient appeared anxious, diaphoretic and in moderate distress, but exam of his oral pharynx showed no lip, tongue, posterior pharynx or uvula swelling. Although the patient initially did not show any signs of airway compromise, the patient was suspected of experiencing angioedema, likely from his ACE inhibitor. Intravenous (IV) access was established, and the patient was given IV famotidine, diphenhydramine, and dexamethasone. The patient was also given aspirin p.o. and IV clindamycin to cover the patient for possible cardiogenic and infectious causes of his presentation. His laboratory findings were essentially normal, as was his chest x-ray. The patient was sent for CT scan of the soft tissues of the neck – at the time, the patient was not exhibiting any form of notable airway compromise. A neck CT demonstrated diffuse soft tissue swelling with narrowing of the supraglottic airway consistent with angioedema. Upon return from the CT scan, the patient’s condition quickly deteriorated. He appeared increasing anxious and had worsening dyspnea. He was given inhaled racemic epinephrine and IV lorazepam to control his symptoms and placed on an oxygen non-rebreather mask. He developed increased oral swelling, including his tongue and uvula. The patient’s Mallampati score changed from Type I to Type IV in a course of less than twenty minutes. Given the patient’s worsening condition the decision was made to emergently intubate the patient. However, multiple attempts to intubate the patient using a traditional Macintosh blade and with a GlideScope® failed. The patient’s oxygen saturation declined to 40% and an emergent cricothyrotomy was performed in the emergency department. Within seconds of completion, the patient’s oxygen saturation returned to normal. The patient was stabilized and brought to the operating room for definitive treatment – a tracheostomy. ACE inhibitors are the most common cause of medication-induced angioedema. It was unknown why this patient was on two ACE inhibitors at presentation. Numerous studies have shown that lisinopril, in particular, is a frequent cause of angioedema. While medication-induced angioedema generally resolves within 24-48 hours of stopping the medication, it can have life-threatening consequences as in this patient’s case. Treatment for medication-induced angioedema includes immediately stopping the offending agent, IV steroid treatment, diphenhydramine (H₁ blocker), famotidine (H₂ blocker), and continuous SpO₂ monitoring – all of which were done in the case. An emergency room clinician should always be weary of this and have means of protecting the patient’s airway readily available – including preparing for an emergent cricothyrotomy.

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