An Unusual Case of Angioedema at Home and Eventual In-Hospital Multi-disciplinary Management: A Case Report

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Introduction
Angioedema is the abrupt swelling of the skin and mucous membranes. The most common cause of angioedema is allergic angioedema of which 39.6% of reactions are caused by drugs. Multiple case reports have demonstrated lisinopril as an etiology for angioedema. Our case report supports chronic lisinopril use as the source of life threatening angioedema that lead to emergent airway management.

Case Report
We present a 48 year old AAF with history of HTN, dyslipidemia, bipolar disorder, and Crohn's disease who reported a two-day history of lethargy, sleep disturbance, and nausea. Subsequently, she ingested an unknown dose of Phenergan (promethazine). Two hours later, she reported dyspnea, neck edema, and a noisy voice. Emergency medical services were notified and the patient was brought to the Emergency Department. On arrival, the patient had difficulty breathing. O2 saturation was 88%, blood pressure was 154/108, pulse 116, and respiration rate 30. Intravenous access was immediately obtained. She received IV solumedrol, pepcid, pantoprazole, and epinephrine; however, she quickly decompensated and needed emergent intubation.

The Anesthesiology team was notified. RSI was attempted with direct laryngoscopy with Miller 3 and Mac 4 blades as well as video glidescope. Ventilation was maintained via bag mask. She was then taken to the OR where formal tracheostomy was placed. During transport, the patient was successfully bag-masked. However, she vomited. Upon arrival to the OR, her mouth was suctioned and food particles removed. Tracheostomy was successfully preformed. The oxygen saturations remained 80-90% during transport, the patient was successfully bag-masked. She was subsequently transported to ICU for further management.

Further history revealed, in addition to phenergan, the patient was compliant with multiple medications such as imuran, lithium, seroquel, and lisinopril. The source of life threatening angioedema that lead to emergent airway management.

Discussion
ACE inhibitors, primarily Lisinopril, are well documented as the initiating factor of drug-induced angioedema. As much as a ten-fold increase in bradykinin plasma levels has been noted in patients during an episode of angioedema secondary to ACE-inhibitors (1). This results in vasodilation and increased vascular permeability allowing the extravasation of plasma into submucosal edemas causing angioedema (2,3).

Angioedema is not limited to tissue of the airway. It is described as affecting all submucosal tissue including the intestine. According to Augenstein et al., patients can present with lethargy, abdominal pain, nausea, and emesis (4). This very similar presentation of nausea and vomiting is what prompted our patient to ingest promethazine for her symptoms.

Although lisinopril induced angioedema usually occurs days to weeks after commencement of therapy, angioedema can develop years after single treatment initiation. Norman et al. describes a patient that experienced two episodes of angioedema after taking lisinopril for approximately eleven years (5). Our patient had a two-year history of chronic lisinopril use.

Establishing an airway in an emergent situation in the ambulatory setting can be challenging. Often there are limited experienced emergency department physicians familiar with airway anatomy and proper airway management. It is well known that multiple attempts at intubation exacerbate edema and increase the likelihood of a failed airway. Additionally, the availability of tools such as the video laryngoscope and fiberoptic scope are scarce outside of the OR.

Figure 1: Detail of airway anatomy
Figure 2: Patient with angioedema
Figure 3: American Society of Anesthesiologists Difficult Airway Algorithm

References


