CHIEF COMPLAINT – SHORTNESS OF BREATH

History of Present Illness
49 year old white male presents to the Emergency Department with the acute onset of shortness of breath (SOB) progressive for three hours. The patient describes a mild pain that worsens when he attempts to swallow. He reports a feeling of “something stuck in my throat,” but denies any recent meals. The patient denies any trauma to the area. He has never had an episode such as this in the past.

Past Medical History
Hypertension
Obstructive Sleep Apnea
Obesity
Anxiety

Past Surgical History
Back surgery

Social History
Tobacco – 1.5ppd
Alcohol – uses daily, last drink was 2 hours prior to presentation
Illicit drug use – history of opiate abuse, currently on Suboxone

Medications
Lisinopril
Captopril/HCTZ
Suboxone
CPAP machine

Allergies
Penicillin
Sulfa medications

LABORATORY FINDINGS

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>11.6</td>
</tr>
<tr>
<td>Hct</td>
<td>38.7</td>
</tr>
<tr>
<td>PC</td>
<td>13.6</td>
</tr>
<tr>
<td>PLT</td>
<td>127</td>
</tr>
<tr>
<td>ALT</td>
<td>15</td>
</tr>
<tr>
<td>AST</td>
<td>94</td>
</tr>
<tr>
<td>ALP</td>
<td>15</td>
</tr>
<tr>
<td>BUN</td>
<td>115</td>
</tr>
<tr>
<td>Cr</td>
<td>6</td>
</tr>
<tr>
<td>Na</td>
<td>136</td>
</tr>
<tr>
<td>K</td>
<td>4.2</td>
</tr>
<tr>
<td>CO2</td>
<td>27.6</td>
</tr>
<tr>
<td>LFTs – normal except AST</td>
<td>190</td>
</tr>
<tr>
<td>and ALK Pns – 169</td>
<td></td>
</tr>
<tr>
<td>Alcohol – Negative</td>
<td></td>
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<tr>
<td>Troponin – 0.2</td>
<td></td>
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<tr>
<td>Tox panel – Negative</td>
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</tbody>
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PHYSICAL EXAM

VITALS – Temp 36.0  Pulse 115 Resp-20 BP- 181/92  Sp02- 95% RA
GENERAL – Moderate diarrhea, very anxious
HEENT – no lip, tongue, posterior pharynx, or uvula swelling, no LAD
PULM – CTA bilaterally, using accessory muscles, speaking in full sentences
CARDIO – tachycardic but regular, no murmurs
ABDOMEN – obese, soft, non-tender, + bowel sounds
EXT – no edema, full range of motion
NEURO – non-focal, sensation intact, A&Ox3
SKIN – extremely diaphoretic

Emergency Department Course

The patient was suspected to be experiencing angioedema, likely from his ACE inhibitor which he had been started on approximately three months prior to presentation.

Portable chest X-ray, laboratory studies, and a CT scan of the patient’s soft tissues were ordered. Intravenous (IV) access was established, and the patient was given IV fentanyl, 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.

Upon return from the CT scan, the patient’s condition quickly deteriorated. He now had 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.

The decision was immediately made to emergently intubate the patient. Multiple attempts to intubate the patient by anesthesia using a traditional Macintosh blade and with the GlideScope® failed.

It was determined that an emergent cricothyrotomy was required. As the procedure was performed, the patient’s oxygen saturation declined to 40%. However, within seconds of the procedure’s completion, his oxygen saturation rebounded to the 90’s. The patient was stabilized and transferred to the operating room for definitive treatment – a tracheostomy.

CONCLUSIONS

Angiotensin Converting Enzyme Inhibitors (ACE inhibitors) are the most common cause of medication-induced angioedema. Numerous studies have shown that Lisinopril, in particular, is a frequent cause of angioedema. In a recent study of over 42,000 patients receiving anti-hypertensive medications, angioedema occurred in 0.13% (52 patients). Of those patients with angioedema, 70% had been on Lisinopril.

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 Sp02 monitoring – all of which were done in the case.

Even with the recommended treatment and monitoring, a patient’s condition can quickly deteriorate and may require invasive measures. 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.

BIBLIOGRAPHY