



LUDWIG'S ANGINA IN THE SETTING OF OBSTRUCTING SIALOLITHIASIS



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Introduction

- Ludwig's Angina is a potentially life-threatening cellulitis of the soft-tissues of oropharynx that can quickly lead to airway compromise.^{1,2}
- The term was coined by a scientist, Wilhelm Frederick von Ludwig in 1836.¹
- The majority of cases are due to a local dental infection/abscess that spreads to the soft tissues of the mouth.³
- It is possible for the infection to spread from the superficial tissues of the mouth into the mediastinum, leading to potential sepsis and systemic infection.⁴
- Some risk factors that could predispose someone to development of Ludwig's angina include prior history of dental carries, malnutrition or current diabetes diagnosis.⁴
- There has also been research that states that excessive NSAID use can pre-dispose someone to the pathology.⁴
- Patients often present with an acute onset of tongue/throat swelling. Many also report pain and a history of dental infection.⁵
- Some present already in airway compromise due to the ability for swelling to expand quickly in the disease process.⁶
- The progression of the swelling can happen quickly, making swift intervention critical.²
- Patients often require early intubation and intervention with abx and surgery depending on the cause.²
- With prompt treatment (antibiotics and early intubation as needed), the survival rate is approximately 85%.⁷

Table 1: Differential Diagnosis

Allergic reaction
Drug-related angioedema
Local cellulitis
Ludwig's angina
Infected oral abscess
Sepsis of unknown source

Case Description

History

- A 51-Year old Caucasian male with a past medical history of hypertension and hyperlipidemia
- 24 hour history of neck swelling and stomatitis
- Sent to the ED from urgent care to rule out Ludwig's angina.
- Described the feeling as a fullness in his neck as well as a sharp pain in his mouth, rated the pain a 7/10.
- Denied any recent illness, recent dental work or new medications.
- Denied shortness of breath
- No known allergies, prior surgeries or hospitalizations and was up to date on all childhood vaccines.
- Medications metoprolol 50mg BID and atorvastatin 10mg daily
- No recent travel and was never a smoker.

Physical Ex

- Vitals: Temp: 98.2F, O2 99% RA, BP: 140/90mmHg, RR: 14bpm, Pulse: 110bpm
- Diffuse swelling was appreciated on the left side of the patients face and down his neck stopping at the clavicle.
- Airway was patent, but there was diffuse mucosal edema in the oropharynx, as well as edema and purulence from his left Stenson's duct.
- There was a double tongue sign present on the submandibular aspect of his oral cavity (figure 1.1).
- Lung sounds were clear to auscultation bilaterally and he had a normal rate and rhythm on cardiac exam.

Diagnostics

- Blood cultures, a CBC, CMP, and lactate were collected and sent to the lab
- All labs within normal limits except for **WBC: 12.5K/mcL**
- CT of his head and neck with and without IV contrast was performed
- The CT scan showed a 10mm stone in the patients left parotid gland, as well as soft tissue swelling with minimal tracheal compression. (figure 1.2)

Patient Management

- IV antibiotics, fluids and dexamethasone were administered promptly, surgical labs were ordered
- Patient was admitted for surgical removal of the stone, which was done the following day without complications.
- He was continued on IV antibiotics until his discharge and was sent home on PO abx
- He made a full recovery and is being followed by an ENT specialist.

Hospital Course

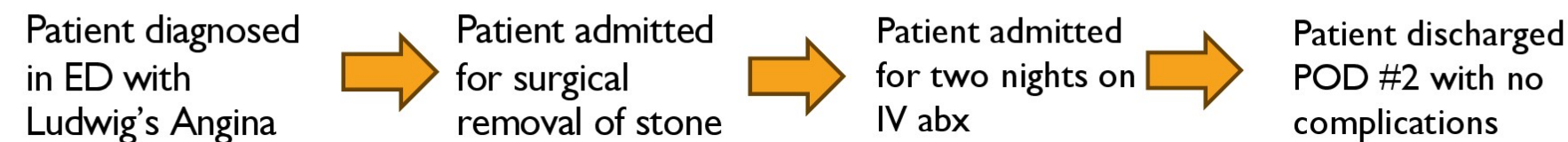


Figure 1.1: "Double thumb" sign seen in some patients with Ludwig's angina

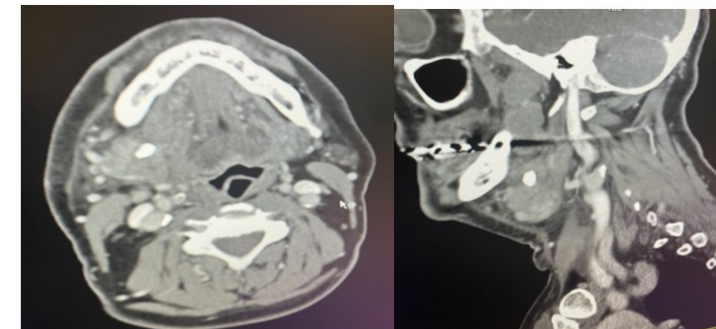


Figure 1.2: CT imagery of the patient showing a 1cm stone in the left parotid duct and soft tissue swelling

Discussion

- Due to the physical exam findings of a double tongue sign, as well as the acuity of symptom onset, the diagnosis of Ludwig's Angina was at the top of the differential.⁸
- Since it was diagnosed and intervention was started in the early stage of disease, intubation was not indicated.⁶
- Surgical intervention in these patients has been seen to provide the best outcomes and decreases morbidity and mortality associated with the condition.⁴

Conclusions

- Ludwig's angina due to obstructing sialolithiasis is a very rare cause of this potentially life-threatening cellulitis.
- The standard treatment for this form of cellulitis is IV fluids, antibiotics, surgery and early intubation if it is required.
- There is some research that states that early use of steroids is linked to more positive outcomes in patients with Ludwig's angina.
- Quick action and early treatment are the keys to survival of this diagnosis and should be on the differential for anyone presenting with acute onset of neck swelling and stomatitis.

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