

A Rare Complication of Wisdom Tooth Extraction - Ludwig's Angina

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INTRODUCTION

- Ludwig Angina is a life-threatening, rapidly-progressive cellulitis involving the submandibular, sublingual and submental spaces, classically bilaterally.^{1,2}
- Rapid airway management remains essential component of care.³
- We present a complicated case of an 18-year-old female with Ludwig Angina following wisdom tooth extraction requiring nasotracheal intubation.

CASE DESCRIPTION

History

- 18 year old female with no past medical history that presented after removal of her upper right, lower right and lower left third molars.
- after surgery patient endorsed subjective fever, increased swelling, nausea and diarrhea.
- received Zofran, IV fluids, and steroids. The swelling continued to increase over the next couple hours, which prompted ED visit.

Physical Exam

- ER Vitals: T 100.7, HR 128 and BP 84/68
- Exam: marked symmetrical bilateral edema of the cheeks, upper and lower lips, and of the superior submental and anterior neck with associated erythema and tenderness, trismus of the jaw

Hospital Course

- Facial edema progressed quickly in the ED and she underwent awake nasotracheal airway placement as orotracheal intubation was limited due to trismus and swelling.
- Received treatment for potential angioedema and was started on broad spectrum antibiotics with Vancomycin and Meropenem.
- Blood cultures returned positive for *Streptococcus pyogenes* in 1 of 2 bottles.
- Echocardiogram demonstrated a filamentous, mobile lesion arising from the aortic valve, consistent with native valve endocarditis.
- She was transitioned to Ampicillin-sulbactam and Clindamycin. After several days her infection markers and swelling improved and she was successfully extubated.
- Following discharge she underwent drainage of fluid collection in her left cheek which yielded purulent appearing fluid and continued IV antibiotic therapy for 6 weeks.

LABS/IMAGING

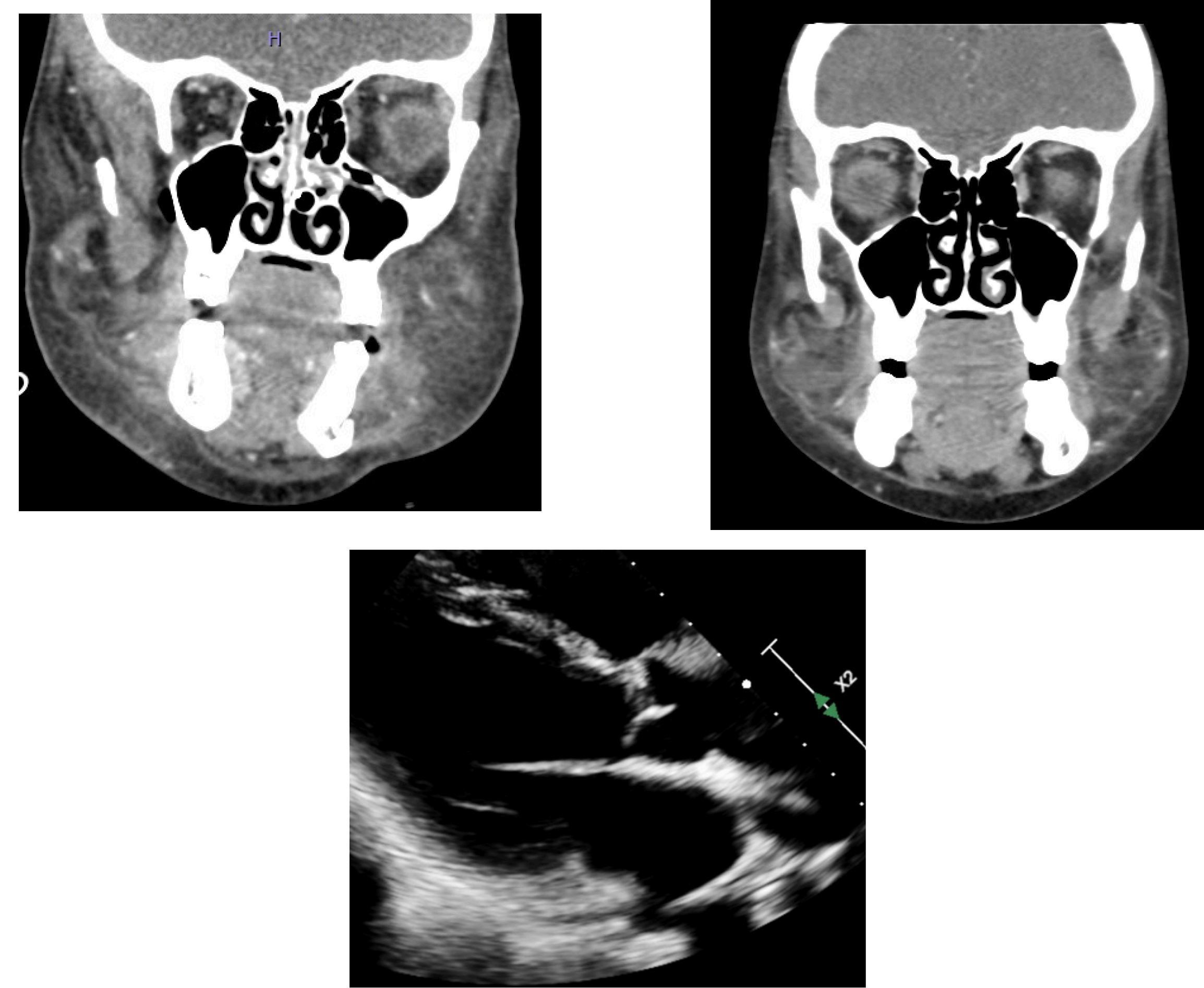


Fig. 1 (Top Left): CT Face on 7/27/22 showing severe facial/neck soft tissue cellulitis with scattered locules of air within cheeks/about maxillary sinuses

Fig. 2 (Top Right): CT Face 8/2/22 showed improvement of subcutaneous emphysema though with persistent modest subcutaneous and intramuscular edema involving the bilateral maxillary and mandibular soft tissues

Fig. 3 (Bottom): Echocardiogram demonstrating filamentous, mobile lesion appears to arise from the NCC/LCC commissure

LABS/IMAGING

ADMISSION LAB VALUES		
Component	Value	Reference Range
WBC	12.8 10 ³ /uL	4.0-10.9 10 ³ /uL
Absolute Neutrophils	12.25 10 ³ /uL	1.48-8.32 10 ³ /uL
POC Lactic Acid	6.20 mmol/L	0.90- 1.70 mmol/L
POC TCO2	17.0 mmol/L	24.0-29.0 mmol/L
POC Anion Gap	23 mmol/L	10-20 mmol/L
POC pH	7.31	7.35-7.45

ADDITIONAL LAB VALUES		
Component	Value	Reference Range
C1 Esterase Inhibitor Activity	28 mg/dL	21-39 mg/dL
CK	65 IU/L	38-234 IU/L
Procalcitonin	9.14 ng/mL	< = 2 ng/mL
Antistreptolysin O Antibody	1656 IU/mL	0-145 IU/mL
CRP	7.3 mg/dL	0.0-0.9 mg/dL
Sedimentation Rate, Automated	57 mm/hr	0-25 mm/hr

DISCUSSION

- Standard wisdom tooth extraction that was complicated by Ludwig Angina, *Streptococcus pyogenes* bacteremia and aortic valve endocarditis.
- Ludwig Angina is rare, though presents the classic association with dental procedures, particularly in the third molar space, as seen in our patient.^{4,5}
- Of utmost importance is early identification, airway protection and initiation of broad spectrum antibiotics.
- Swelling in the floor of the mouth can displace the tongue posteriorly thereby leading to airway demise.⁴
- Nasotracheal airway is the preferred method in Ludwig's Angina.⁶
- Upon discharge she was transitioned to Ceftriaxone though she demonstrated lack of response to thus and was ultimately broadened to Ertapenem for which she completed a 6 week course.

CONCLUSION

Ludwig's Angina is a severe, life-threatening deep neck space infection that requires prompt identification. Early initiation of antibiotics and airway management are essential in the prevention of complete respiratory compromise.

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