

## Case Report

### Angina Ludovici — A Rare Case Report

Ishwariya<sup>1</sup>, Madhan Raja<sup>2</sup>, Jude Vinoth<sup>3</sup>

Here we elaborate a case report on Ludwig's angina, a diffuse cellulitis of the neck that has an acute onset that spreads rapidly affecting the sublingual, submandibular and submental spaces resulting in a state of emergency<sup>1</sup>. It is an uncommon cause of upper airway obstruction whose instantaneous diagnosis and treatment in the emergency department could be life-saving.

[J Indian Med Assoc 2023; 121(8): 86-7]

**Key words :** Ludwig's angina, Cellulitis, Odontogenic, Upper airway obstruction, Life-saving ED treatment.

#### CASE REPORT

**A** 66-year-old gentleman presented to the emergency department with breathing difficulty. He was on antibiotics for sore throat that developed after dental extraction 2 days ago. His breathing worsened rapidly with increase in swelling of the neck past 12 hours with decrease in level of consciousness. He is a known diabetic.

On arrival, his airway was not patent. His vitals were, heart rate 106/mt, Blood pressure of 110/70 mmHg, temperature 101.8°F and oxygen saturation was 94% in room air. His GCS was low 6/15. On examination he was dyspneic, anterior swelling of upper neck and back fall of tongue, trismus and stridor were noted. With effective hydration, his sensorium improved. He was immediately started on antibiotics after the collection of blood samples for cultures. His initial blood reports disclosed elevated leucocytes, liver and renal parameters. He was then electively intubated with preparedness for difficult intubation. He was started with Inj. Teicoplanin and Inj. Metronidazole, intravenous steroids (inj. Hydrocort 50 mg 6<sup>th</sup> hourly) were given to bring down airway edema, nebulizers, gastroprotectives, analgesics and insulin. CT chest and CT neck showed extensive subcutaneous fat stranding and soft tissue emphysema involving all free spaces of neck extending up to the superior mediastinum. Diffuse circumferential wall thickening and edema of the walls of the pharynx is seen. ENT opinion was obtained

#### Editor's Comment :

- Early recognition is required for prompt treatment and management.

and patient underwent Ludwig's abscess drainage with cervical decompression and debridement. He improved clinically after the surgery. In spite of vigorous management, he showed only partial improvement due to underlying sepsis. He was then started on inotropes to maintain Mean Arterial Pressure above 65mm/Hg. He then gradually showed improvement and discharged after 1 week.

#### DISCUSSION

Ludwig's angina is an infection of the submandibular space. This space lies between the floor of mouth and tongue on one side and cervical fascia ranging between the hyoid bone and mandible on the other. Mylohyoid muscle splits it into two as:

Above - Sublingual compartment

Below - Submental and submaxillary compartment

These two compartments are unremitting in the vicinity of the posterior border of mylohyoid muscle

Dental infections credit for about 80% of the etiology. Roots of premolars lie above the mylohyoid cause sublingual space infection while roots of the molar teeth extending below the mylohyoid primarily cause submaxillary space infection. Other causes include submandibular sialadenitis, injuries to oral mucosa and fractures of the mandible. In children, it can occur de novo, without any noticeable cause. Streptococci viridans (40.9%), staphylococcus aureus(27.3%), staphylococcus epidermis (22.7%) and pigmented bacteroids were isolated from the infections of deep neck<sup>2</sup>. Most patients report neck swelling frequently with either dental pain or

Department of Emergency Medicine, Apollo hospitals, Madurai, Tamilnadu 625020

<sup>1</sup>MBBS, MEM, Resident and Corresponding Author

<sup>2</sup>MD, FAECS, Consultant,

<sup>3</sup>MD, MRCEM, Senior Consultant and Head

Received on : 21/07/2022

Accepted on : 25/08/2022

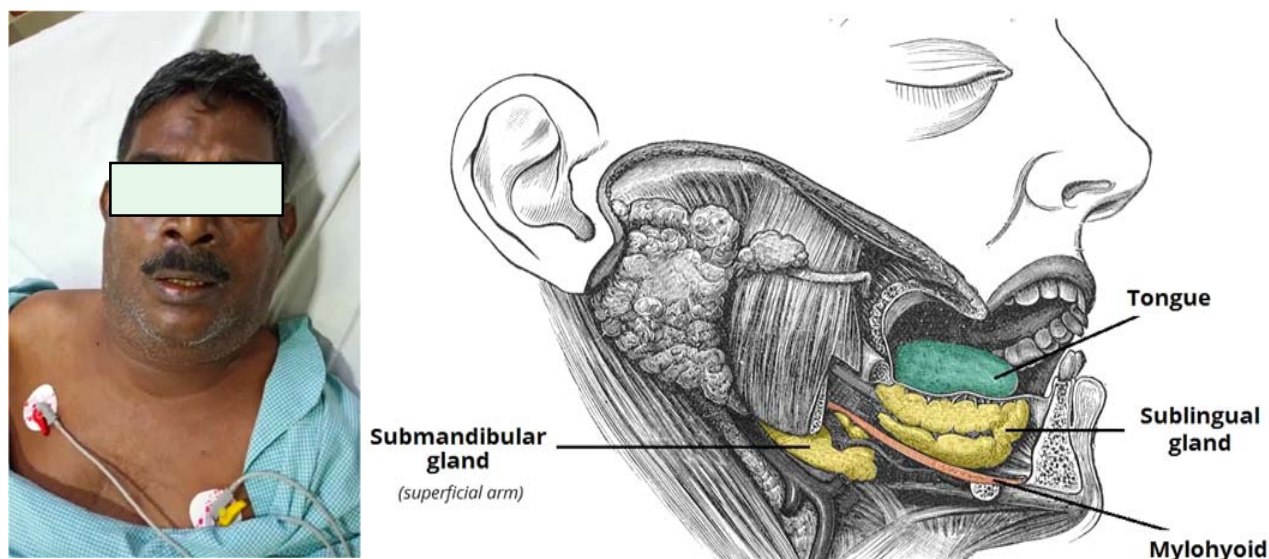


Fig 1 — Images of the Patient and Saces of Neck

following a recent dental procedure followed by sore throat, dysphagia (35%) pharyngodynia (25%), fever (25%), trismus (15%) and dysphonia (15%). Involvement of sublingual space bring about swelling of the structures in the floor of the mouth and tongue appears to be pushed upwards and backwards menacing the airway. The involvement in other spaces causes the swelling of soft tissues, woody hard in consistency, cellulitis instead of frank pus, occasionally with palpable crepitus. In ER perspective, airway compromise is synonymous with the name Ludwig's angina, which should be managed immediately and appropriately. The stage of the disease at the time of presentation, available resources, physician experience, are all key factors in the decision for airway management either by elective intubation or tracheostomy. Tracheostomy remains the gold standard when stridor is present but sometimes it may be impossible in cases of anatomical distortion and in advanced cases of the disease. Blind nasotracheal intubation should not be endeavored in patients with Ludwig's angina given the possibility for bleeding and abscess rupture. Early antibiotic therapy is of critical

importance for successful treatment. Penicillin G, metronidazole or clindamycin are suitable as initial coverage. Additionally, intravenous steroids and nebulized adrenaline use helps to allow easier intubation avoiding tracheostomy or cricothyroidotomy and letting antibiotic penetration into the facial spaces by reducing airway edema. Complications of Ludwig's angina consist of thrombophlebitis of the internal jugular vein, carotid artery rupture or sheath abscess, empyema, subphrenic abscess, pericardial effusion, pleural effusion, mediastinitis, osteomyelitis of the mandible and aspiration pneumonia<sup>1,3</sup>.

#### REFERENCES

- 1 Candamourty R, Venkatachalam S, Babu M, Kumar G — Ludwig's angina—an emergency: a case report with literature review. *J Nat Sci Biol Med* 2012; **3**: 206-8. [PMC free article] [PubMed] [Google Scholar]
- 2 [jnsbm.com/jnsbmsite/wpcontent/uploads/2021/07/JNatScBiolMed-3-2-206.pdf](http://jnsbm.com/jnsbmsite/wpcontent/uploads/2021/07/JNatScBiolMed-3-2-206.pdf)
- 3 Saifeldeen K, Evans R — Ludwig's angina. *BMJ*; **21(2)**: emj.bmj.com/content/21/2/242. <http://dx.doi.org/10.1136/emj.2003.012336>