

Case Report on Ludwig Angina in a Case of Diabetes Mellitus

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Abstract

Introduction: Ludwig's angina (latin: Angina ludovici) is a type of severe cellulitis involving the floor of the mouth and is often caused by bacterial sources. Early in the infection, floor of the mouth raises due to swelling, leading to difficulty swallowing saliva. As a result, patients may present with difficulty speaking and drooling. As the condition worsens, the airway may be compromised and hardening of the spaces on both sides of the tongue may develop. Overall, this condition has a rapid onset over a few hours.

Case presentation: A 62-year-old- male admitted in Tertiary care hospital Wardha, at surgery ICU. With the complaints painful swelling and pus discharge over the right side of the face for 8 days, difficulty in mastication from 8 days, difficulty in a speech during 2 days. No history of cold, cough, fever, syncope, loss of consciousness. No history of trauma. Previous treatment, no prior hospitalization. There was associated illness were present like Diabetes mellitus. There was no associated illness were present like tuberculosis, and thyroid disorder. significant past history present like diabetes mellitus. Physical examination and systemic examination was done. a thoracic CT-scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test. conscious and oriented, abdominal examination: soft and nontender. No any abnormality detected in musculoskeletal system.

Therapeutic management: All the routine investigation done. Hemoglobin 10.8gm% was on average side. a thoracic CT- scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test. surgery opinion was taken SOS in emergency (Strangulation, bleeding, obstruction and volvulus). Surgery opinion was taken and patient was advised for conservative management.

Conclusion: due to conservative management and quality nursing care patient condition was stable and had no active complaints at present hence patient is being discharged.

Keywords: Ludwig angina and diabetes mellitus, tracheostomy.

Introduction:

Ludwig angina is a bacterial infection that affects the tongue and the floor of the mouth. It usually occurs due to a root infection (such as a tooth abscess) or a mouth injury. It's a severe, rapidly spreading cellulitis that affects the submandibular, sublingual, and occasionally submental spaces. Because of the cellulitis, which causes airway impairment, this illness can be lethal if not treated aggressively and quickly. Mortality rates were above 50% before the middle of the twentieth century, when antibiotics first were released. The origins of these teeth breach the mylohyoid ridge, allowing access to the submaxillary area for any abscess or dental infection. Combined with enhanced imaging modalities and surgical methods, antibiotic medication has resulted in a death rate of around 8%.

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Oral abscesses, include superficial or parapharyngeal abscesses, mandibular fractures, and peritonsillar or parapharyngeal abscesses, lacerations/piercing, submandibular sialadenitis, and oral cancer are among the other reasons. It is typically fatal without treatment because of the possibility of suffocation, with a 50% death rate. The

surgical intervention with vigour, the introduction of antibiotics, and the enhancement have received dental care, which resulted in a dramatic decrease in mortality to less than 10%.²

Ludwig's angina is a relatively uncommon condition, and Diabetes mellitus (DM) and diabetic ketoacidosis (DKA) in conjunction (DKA) are even more unique. DKA is one of the more dangerous consequences of diabetes mellitus type 1 and types 2, with a fatality incidence of 2-5 per cent. Various situations (infectious diseases, insulin omission or inappropriate dose, alcohol use, surgical procedures, and long periods of fasting or dietary violations) can cause or accelerate the development of a DM (often unnoticed) and lead to its abrupt onset as a DKA is one of the more well-known significant complications that has been identified. DKA up to 20% of people admitted to hospitals with DKA have a past history of DM that was not detected during clinical conditions, such as myocardial infarction, pancreatitis, pulmonary thromboembolism, or infections, with urinary tract infections and pneumonia being the most common. However, several cases of Ludwig's angina have been studied in diabetic people. Documented, this is the first report of Ludwig's angina in the setting of a DKA and an onset DM in the medical literature.³

Patient information:

We report a 62-year-old male admitted in Tertiary care hospital Wardha, at surgery ICU. With the complaints painful swelling and pus discharge over the right side of the face for 8 days, difficulty in mastication from 8 days, difficulty in a speech during 2 days. No history of cold, cough, fever, syncope, loss of consciousness. No history of trauma. Previous treatment, no prior hospitalization. There was associated illness were present like Diabetes mellitus. There was no associated illness were present like tuberculosis, and thyroid disorder. Significant past history present like diabetes mellitus. Physical examination and systemic examination was done. A thoracic CT-scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test. Conscious and oriented, abdominal examination: soft and nontender. No any abnormality detected in musculoskeletal system.

Physical examination: Pulse: 86 beats per min, Blood pressure: 130/80 mm of Hg, temperature afebrile, general examination was normal.

Medical, family, and Psycho-social history: - There were no history of comorbidities in patient's family. Patient belongs to middle class family. He is living with his wife and 1 son and 1 daughter. Patient maintains good interpersonal relation with family members, relatives and neighborhood. Patient does not have bad habit like smoking, tobacco chewing and alcoholism.

Relevant past intervention with outcomes: - For above mentioned complaints patient was admitted in private hospital. He was get relief from that hospital. That's why patient referred to tertiary care hospital Wardha.

Diagnostic Assessment:

All the routine investigations were done: Hemoglobin: 10.8gm % was on average side. Red blood cells: 3.74, White blood cells: 9800, MCHC: 32.4, MCV: 54.4, MCH: 20.2, Total platelet count: 3.33, HCT: 18.6. Coagulation profile done-APTT- control-26.4, APTT patient -30.4, Prothrombin Time-control 11.9. Prothrombin Time-Patient: 13.0, INR: 1.08. Kidney function and liver function test were done. ECG and X-ray was done which was normal.

Therapeutic Management:

All the routine investigation done. Haemoglobin 10.8gm% was on average side. A thoracic CT-scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test. Surgery opinion was taken in emergency (Strangulation, bleeding, obstruction and volvulus). Surgery opinion was taken and patient was advised for conservative management. Surgery opinion was taken and patient was advised for conservative management.

Treatment on admission: Inj. meropenem 500 mg, Inj insulin, Inj clindamycin 600 mg, Inj. metro 500 mg, Inj. Pan 40 mg BD. For pain control, Inj. Neomol, Inj. Perinorm. inj. Emset 4mg IV BD

Treatment on Discharge: Tab. Pan 40mg OD, Tab. Metro 500mg BD, tab. Ondansetron 4mg SOS, Tab. Cefixime 200mg BD.

Patient was stable and had no active complaints at present. Hence patient is being discharged.

Prognosis: -Was good

Outcomes: The patients' health improved.

Discussion:

A 62-year-old- male admitted in Tertiary care hospital Wardha, at surgery ICU. With the complaints painful swelling and pus discharge over the right side of the face for 8 days, difficulty in mastication from 8 days, difficulty in a speech during 2 days. No history of cold, cough, fever, syncope, loss of consciousness. No history of trauma. Previous treatment, no prior hospitalization. There was associated illness were present like Diabetes mellitus. There was no associated illness were present like tuberculosis, and thyroid disorder. significant past history present like diabetes mellitus. Physical examination and systemic examination was done. a thoracic CT- scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test. conscious and oriented, abdominal examination: soft and nontender. No any abnormality detected in musculoskeletal system.

It was managed by the general examination and some routine investigations. a thoracic CT- scan to determine the extent of the lesions, microbiological analysis, complete blood check-up, and radiographic test which was suggestive of Ludwig's angina. But no surgical management was done. Patient was managed with conservative treatment.

Ludwig's angina is a type of cellulitis that affects several fascial spaces in the face and neck and progresses fast. The most typically impacted areas bilaterally are the submandibular spaces, with the potential for further expansion to deeper places. Because the floor of the mouth and tongue are pushed superior and posterior, infection of the submandibular area might cause airway compromise. More respiratory severe issues could result if the infection spreads to the lateral pharyngeal and retropharyngeal areas. Ludwig's angina is a condition that can become fulminant—encompassing the sublingual, submental, and submandibular regions that progress quickly. It usually starts with an infected tooth or has recently been pulled, usually in the second or third molar in the lower jaw. Periapical dental abscesses pierce the inner cortex's jaws and enter the submandibular region. Around the mylohyoidmuscleposterior edge is where the spread to the sublingual area occurs. Mandibular fracture, submandibular sialadenitis, peritonsillar abscess, epiglottitis, and oral cancer have all been documented as causes. Ludwig's angina starts as a minor illness and quickly progresses to an upper neck induration on the both sides, brawny, discomfort, tongue elevation and trismus.⁴

Dysphagia and fever are both common symptoms. Asphyxia produced by increasing swelling of the neck soft tissues is the most dangerous complication of Ludwig angina. Acute loss of airway during procedures to control the disease is another prevalent cause of mortality. Late indicators of impending airway obstruction include stridor, trouble Secretions, anxiousness, cyanosis, and sitting posture are all issues that need to be addressed., all of which suggest the necessity for an artificial emergency airway. A computer tomography scan can help determine the degree of the abscess's retropharyngeal extension and whether or not an artificial airway is required. Other problems include infection spreading to the mediastinum, the carotid sheath, the skull base, and the meninges, with mortality rates ranging from 20-50%.⁵⁻⁹

The submandibular region can become indurated, with palpable crepitus in some cases if individuals arrive with swelling, discomfort, tongue elevation, malaise, fever and neck oedema, and dysphagia. The difficulty in swallowing saliva and stridor indicates that an airway compromise is approaching. The most dangerous complication is airway blockage caused by the tongue's elevation and posterior displacement. Needle drainage can be used to limit the risk of infection spreading. Ludwig's angina is invariably associated with airway impairment, and it is the primary cause of the death. Therefore, airway management is, As a result, the primary therapeutic concern is airway management.¹⁰⁻¹⁴

It's critical to have an anesthesiologist and an otolaryngology team involved very early. Because of the risk of bleeding and abscess rupture, blind nasotracheal intubation should not be attempted in patients with Ludwig's angina. In people with late stages of the disease, cricothyrotomy and tracheostomy are performed under local anaesthetic and carried out on rare occasions in the emergency room if flexible nasotracheal intubation is not possible. Elective. surgery is recommended for patients with fully developed Ludwig's angina, awake tracheostomy is a safer and more logical technique of airway management.¹⁵⁻¹⁶

Conclusion:

A 62-year-old- male came in hospital with above mentioned complaints, in critical condition. On admission patient's complaints painful swelling and pus discharge over the right side of the face for 8 days, difficulty in mastication from 8 days, difficulty in a speech during 2 days. Conservative treatment was given. After the treatment patient's prognosis was good. Finally, patient's health improves. Overall Patient had given a positive response to treatment and patient was stable. Hence patient is being discharged.

Ethical approval: Not applicable

Patient Inform consent: While preparing a case report and for publication patient's informed consent has been taken.

Conflict of Interest: The Author declares that there are no conflicts of interest.

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