ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 06 | June - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

LUDWIG'S ANGINA- AN EMERGENCY: A CASE REPORT

Otorhinolaryngology

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ABSTRACT

Background: Ludwig's angina is a rapidly progressive cellulitis of the floor of the mouth that involves the submandibular, submaxillary, and sublingual spaces. Early recognition and treatment for Ludwig's angina are of paramount importance due to the high risk of complications that can occur in association with Ludwig's angina. **Case presentation:** We present a 40 year old female who presented to us with toothache, neck swelling, fever, dysphagia and odynophagia. On examination, erythematous and indurated swelling was present in neck along with bulge in floor of mouth. Diagnosis of ludwig's angina was made and patient was taken for surgery. **Conclusion:** This case report highlights odontogenic infection as etiology of ludwig's angina which is an emergency because of high risk of complications.

KEYWORDS

INTRODUCTION

Ludwig's angina is a rapidly progressive cellulitis of the floor of the mouth that involves the submandibular, submaxillary, and sublingual spaces.[1] With progressive swelling of the soft tissues and elevation and posterior displacement of the tongue, the most life-threatening complication of Ludwig's angina is airway obstruction. Prior to the development of antibiotics, mortality for Ludwig's angina exceeded 50%.[2] As a result of antibiotic therapy, along with improved imaging modalities and surgical techniques, mortality currently averages approximately 8%.[3,4] The infection can spread to parapharyngeal space, retropharyngeal space and mediastinum. Diagnosis is usually clinical. Early recognition and treatment for Ludwig's angina are of paramount importance due to the high risk of complications that can occur in association with Ludwig's angina. Here, we present a case of 40 years old female with ludwig's angina that developed from odontogenic infection.

Case Report

A 40 year old women presented with complaints of pain in right 2nd molar from last 2 weeks, fever, pain, swelling in neck and inability to open the mouth since 5 days. On physical examination, she was toxic in appearance. She was febrile with 102°f, normotensive, pulse rate of 145 per min and oxygen saturation of 94% on room air. Mouth opening was 1.5 cm (interincisal distance). Bulge was present in floor of mouth and dental caries was present in right 2nd mandibular molar teeth. On neck examination, diffuse neck swelling was present in submental and bilateral submandibular region. Swelling was indurated, non-fluctuant, and tender.

The blood reports were normal except leukocytosis of 14,000/Ul. Immediately ultrasound neck was done and it shows diffuse subcutaneous edema, bilateral submandibular glands were bulky and heterogenous in echotexture. Ill-defined heterogeneously hypoechoic collection measuring 8-10cc with involovement of right geniohyoid was seen. Diagnosis of ludwig's angina was made and patient was posted for surgical decompression. Intraoperatively, approximately 10 ml of pus was drained after breaking all the loculations. She was put on intravenous augmentin and metrogyl. Patient was referred to oral surgery for tooth extraction and oral care.

DISCUSSION

Ludwig's angina was coined after the German physician, Wilhelm Friedrich von Ludwig who first described this condition in 1836 as a rapidly and frequently fatal progressive gangrenous cellulitis and edema of the soft tissues of the neck and floor of the mouth.[5] Ludwig's angina is a diffuse cellulitis of the submandibular, sublingual, and submental space, characterized by its propensity to spread rapidly to the surrounding tissues.

This space is subdivided by the mylohyoid muscle into the sublingual space superiorly and the submaxillary space inferiorly. 85% of cases of Ludwig's angina are odontogenic in etiology, primarily resulting from infections of the second and third molars. The roots of these teeth penetrate the mylohyoid ridge such that any abscess or dental infection has direct access to the submaxillary space. Once infection develops, it spreads contiguously to the sublingual space. Infection can also spread contiguously to involve the pharyngomaxillary and retropharyngeal spaces, thereby encircling the airway.[4]

Infection is often polymicrobial, including both aerobic and anaerobic organisms with Streptococcus pyogenes, Peptostreptococci, and Bacteroides being the most commonly implicated organism.[4] The infection is odontogenic in 85% of cases, and other non-odontogenic causes include peritonsillar abscess, parapharyngeal abscess, mandibular fractures, oral piercings and submandibular sialadenitis.[4,6] Systemic illnesses such as diabetes mellitus, malnutrition, alcoholism, and acquired immunodeficiency syndrome may be risk factor.[5]

The symptoms include weakness, chills, fever, swelling in neck, trismus and hot-potato voice. Indications of advanced stage includes drooling, dysphagia, and respiratory distress. Patients typically present with submental and submandibular swelling which was indurated with browny edema of upper neck. Other symptoms includes swelling of the floor of the mouth, tongue elevation and pain in the affected teeth. Although the patient usually does not have lymphadenopathy. Bulge in floor of mouth is the most significant indicator of Ludwig's angina.

The diagnosis of Ludwig's angina is primarily based on clinical examination of the pharynx, which typically demonstrates an erythematous, oedematous neck, and anterior tongue protrusion.

The most feared complication of Ludwig's angina is airway obstruction. Other complications include mediastinitis, carotid artery rupture, internal jugular vein thrombophlebitis, empyema, necrotizing fasciitis, osteomyelitis, and aspiration pneumonia.[7]

Ludwig's angina is a serious acute cellulitis involving visceral neck areas that requires an urgent multidisciplinary approach, including surgery and intensive care. The prognosis depends on early clinical recognition, prompt surgical treatment, and the experience of the team

managing these patients.

CONCLUSION

This case report highlights odontogenic infection as etiology of ludwig's angina which is an emergency because of high risk of complications. The treatment involves early recognition, securement of the airway, initiation of antibiotics, and potential surgical drainage or debridement.

Images With Legends

Image 1 – Preoperative Picture Of Ludwig's Angina

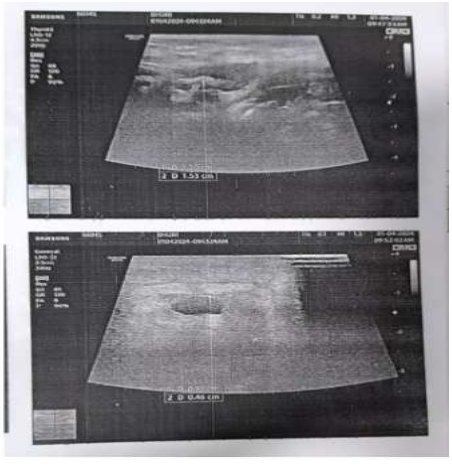

Image 2 – Usg Neck Showing Heterogenously Hypoechoic Collection In Inter And Intramuscular Plane Of Chin With Overlying Mild Diffuse Subcutaneous Oedema

IMAGE 3 – Incision And Drainage (postoperative Picture)

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