International Journal of Pharmaceutical and Bio-Medical Science

ISSN(print): 2767-827X, ISSN(online): 2767-830X

Volume 04 Issue 12 December 2024

Page No : 949-953

DOI: https://doi.org/10.47191/ijpbms/v4-i12-06, Impact Factor:7.792

From Symptoms to Recovery: A Comprehensive Case Report on Ludwig's Angina

Avishi Syal[1], Dr. Yajur Gupta[2], Gursimran Kaur[3], Dr. Muskaan Jha[4], Harleen Kaur[5], Dr. Megha Bahal Kakkar[6]

[1,3,5] Intern, Baba Jaswant Singh Dental College and Hospital, Ludhiana, Punjab, India

[6]Assistant Professor, Department of Oral Medicine & Radiology, Baba Jaswant Singh Dental College and Hospital, Ludhiana, Punjab, India

[2,4]Associate Dentist, Family Dental Cosmetic and Implant Centre, Jalandhar, Punjab India

ABSTRACT

Ludwig's angina is a severe, rapidly progressing cellulitis of the floor of the mouth that can lead to life-threatening airway obstruction. It typically arises from Odontogenic infections and involves the Submandibular, Sublingual, and Submental spaces. This condition is characterized by bilateral swelling, pain, and elevation of the tongue, along with dysphagia, dyspnea, and potential systemic toxicity. Early diagnosis is critical, and treatment typically involves securing the airway, broad-spectrum intravenous antibiotics, and surgical drainage. Despite advances in medical care, Ludwig's angina remains a medical emergency due to its potential for rapid progression and severe complications. This review highlights the pathophysiology, clinical presentation, diagnostic strategies, and management approaches for Ludwig's angina, emphasizing the need for a multidisciplinary approach to optimize patient outcomes.

ARTICLE DETAILS

Published On:
14 December 2024

KEYWORD: Ludwig angina, Airway obstruction, Submandibular space, Sublingual space, Antibiotics.

Available on:
https://ijpbms.com/

INTRODUCTION

Ludwig's angina is a rapidly progressing, life-threatening bacterial infection of the floor of the mouth and the submandibular, sublingual, and submental spaces. Named after the German physician Wilhelm Friedrich von Ludwig, who first described it in 1836, this condition is considered a medical emergency due to the high risk of airway obstruction.[1] Without prompt intervention, Ludwig's angina can lead to severe complications, including respiratory distress and death.

The primary etiology of Ludwig's angina is a polymicrobial infection, often involving both aerobic and anaerobic bacteria.[2] The most common pathogens include Streptococcus species, Staphylococcus species Anaerobes.

It begins with an infection in the floor of the mouth, usually secondary to a dental source. The infection spreads rapidly through the connective tissue planes of the submandibular and sublingual spaces, as these areas are connected without barriers. The inflammation and edema result in swelling that can push the tongue backwards, leading to airway obstruction.[2,3] The cellulitis does not typically form an abscess; rather, it presents as a diffuse, hard, and painful swelling. The lack of pus formation complicates the infection's spread and increases the risk of septicemia if untreated.

The risk of airway obstruction makes Ludwig's angina a medical emergency, often requiring surgical intervention, such as tracheostomy, to secure the airway and drainage of the infection. The rapid progression and potential for severe complications underline the importance of early recognition and treatment.[3]

The clinical signs and symptoms of Ludwig's angina includes firm swelling in the submandibular and sublingual regions spreading neck and floor of the mouth, leading to a characteristic "bull neck" appearance.

Elevation of the tongue, often pushed upwards and backwards, which may cause difficulty in swallowing (dysphagia), speaking (dysarthria), and breathing.

Pain in the neck and the floor of the mouth, which is severe and may extend to the ear or throat. Trismus of the

masticatory muscles.[4] Fever, malaise, and systemic signs of infection.

Visual inspection and palpation of the neck and oral cavity. CT Scan is the Gold standard for identifying the extent of infection and involvement of deep fascial planes.[5]

The management of Ludwig's angina focuses on securing the airway, controlling the infection, and providing supportive care. Due to the risk of rapid airway obstruction, immediate assessment and intervention are crucial.[6] Airway management typically involves either intubation or, in more severe cases, a tracheostomy if swelling prevents successful intubation. Broad-spectrum intravenous antibiotics, such as a combination of penicillin and metronidazole or clindamycin, are administered to cover both aerobic and anaerobic organisms.[7] Surgical drainage of abscesses is necessary when present, especially if there is no response to antibiotics. Additionally, supportive care, including intravenous fluids, pain management, and close monitoring for signs of sepsis, is vital to prevent complications.[8] Early diagnosis and prompt treatment significantly improve outcomes, reducing the risk of life-threatening complications like airway obstruction and sepsis.

Thus, Ludwig's angina is a severe, rapidly spreading infection that requires immediate medical attention. Understanding its etiology, pathophysiology, and causes is critical for prompt diagnosis and treatment to prevent potentially fatal complications.[9,10]

CASEREPORT

A case of 38 year old male who reported to the department of oral medicine and radiology with the chief complaint of pus formation in neck area since 6 days and pain in lower right back tooth region since 1 month. Patient revealed that pain is sharp, continuous, radiating towards head region.

FIGURE 1: FACIAL PROFILE OF THE PATIENT - FRONT

FIGURE 2 & 3: FACIAL PROFILE OF THE PATIENT – LEFT & RIGHT

Patient gives history of tobacco consumption 1-2 times daily since 2 years and alcohol consumption occasionally since 1 year.

On extra oral examination, patient presents with sinus drainage medial to the right clavicle

On intra oral examination, patient presents with tender, reddish swelling on the lower border of mandible both right and left side, reduced mouth opening (1 Finger).

FIGURE 4: ORTHOPANTOMOGRAPH OF THE PATIENT

To evaluate the origin of pain, Radiological investigations were made and Orthopantograph was done. During analysis of radiograph, horizontal complete impaction #48. Mesio - Disto proximal caries with the presence of a well-defined border with an associated radiolucent rim comprising of radiopacity is located in periapical region of #47 (Mesial Root) #31, #32. Slight Periodontal Ligament widening seen around the apex of tooth root #46, #44, #45. Generalised Bone loss is seen in mandibular arch.

CASEDISCUSSION

Ludwig's Angina is a condition in which patient is symptomatic and for this immediate treatment is generally required to avoid any further complication.[11] The dentist must be aware of the appearance of these conditions in clinical practice and have enough knowledge to determine the proper diagnosis, avoiding therefore inappropriate approaches which can compromise the patient's health.[12]

In this case, the incision was given and drainage of the sinus was done followed by long antibiotic prophylaxis and patient is recalled for follow ups.

FIGURE 5 : POST OPERATIVE VIEW - FRONT

FIGURE 6: POST OPERATIVE VIEW – RIGHT SIDE WITH INCREASED MOUTH OPENING



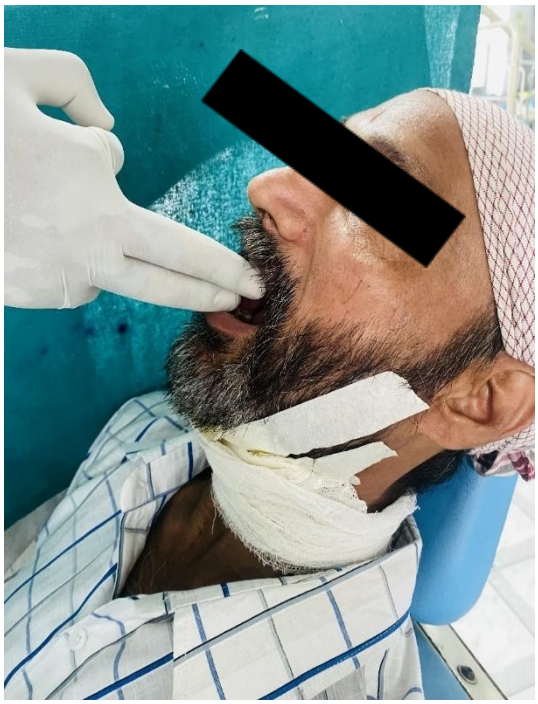

FIGURE 7, 8 & 9 : POST OPERATIVE – RIGHT AND LEFT SIDES SHOWING 2 FINGER MOUTH OPENING

CONCLUSION

Ludwig's Angina is a serious, potentially life-threatening condition that requires prompt diagnosis and treatment. It is a rapidly spreading cellulitis of the submandibular, sublingual, and submental spaces, typically caused by a bacterial infection, often originating from dental infections. The risk of airway obstruction makes it a medical emergency. Early diagnosis, timely administration of broad-spectrum antibiotics, and securing the airway are essential to prevent fatal complications such as airway obstruction and sepsis. A multidisciplinary approach, including medical, dental, and surgical interventions, is key to successful outcomes. Furthermore, this case emphasises the importance of dental health in preventing such severe complications. Routine dental checkups and timely treatment of dental infections could potentially reduce the incidence of odontogenic infections that lead to Ludwig's angina.

In conclusion, Ludwig's angina remains a challenging condition with potentially fatal consequences if not addressed early, but with prompt and appropriate care, the risk of severe complications can be significantly mitigated. This case serves as a reminder of the importance of vigilance, rapid response, and comprehensive management in handling such emergencies.

REFERENCES

I. Balaji, S. M. (2011). Airway Management in Patients with Ludwig's Angina. The Indian Journal of Critical Care Medicine

II. Lakshmi, V., Kumar, S., & harma, . (2012). Ludwig's Angina: A Case Report and Review of Management in the Indian Context. International Journal of Contemporary Medicine.

III. Jain, M. K., Tripathi, A. K., Rathore, P. K., et al.(2010). Ludwig's Angina: A Clinical Study.

IV. Osborn, T. M., Assael, L. A., Bell, R. B., et al. (2003). Deep Space Neck Infections: Principles of Surgical Management. Oral and Maxillofacial Surgery Clinics of North America

V. Ludwig's Angina – An emergency: A case report with literature review by Ramesh Candamourty, Suresh Venkatachalam.

VI. Bansal, A., Miskoff, J., Lis, R. J.* (1996). Ludwig's Angina and Deep Neck Infections. Otolaryngologic Clinics of North America

VII. Meher, R., Jain, A., Sabharwal, A., et al.* (2014). *Ludwig's Angina: A Prospective Study of 14 Cases in an Indian Population and a Review of Literature.

VIII. Wang, L. F., Kuo, W. R., Tsai, S. M., et al.* (2003). Characterizations of Ludwig's Angina and the Clinical Factors Affecting Its Prognosis: A Review of 110 Cases.

IX. Oral Pathology: Clinical Pathologic Correlations. 7th edition. JA Regezi, JJ Sciubba & RCK Jordan, Elsevier, 2017

X. Oral and Maxillofacial Pathology, 4th - edition. BW Neville, DD Damm, CM Allen, AC Chi, Elsevier, 2016.

XI. Burket’s Oral Medicine. 12th Edition, M. Glick editor, 2014.