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Case Report

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LUDWIG'S ANGINA; A CASE REPORT

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ABSTRACT

Ludwig's angina which is a rapidly progressing, submaxillary, subdmandibular and sublingual necrotizing cellulitis of the floor of the mouth that can lead to potentially life-threatening condition due to bearing the potential for airway obstruction. Thus, because of its invasive nature, early identification and management of Ludwig's angina is extremely important.

KEYWORDS: Ludwig's angina.

INTRODUCTION

Ludwig's angina was first described by the German surgeon Wilhelm Friedrich von Ludwig in 1836as a rapidly and frequently fatal progressive gangrenous cellulitis and edema of the soft tissues of the neck and floor of the mouth.[1] with progressive swelling of the soft tissues and elevation and posterior displacement of the tongue , the most life threatening complication of the Ludwig's angina is airway obstruction.[2] The majority of cases of ludwig's angina occur in healthy patients with no comorbidities.[3] nevertheless, there are several conditions that have been shown to predispose patients to Ludwig's Angina, include Diabetes mellitus, alcoholism, acute glomerulonephritis, systemic lupus erythematosus, aplastic anemia, neutropenia and dermatomyositis.[3,4]

In Ludwig's angina, patients demonstrate swelling in the floor of the mouth and neck, pain, malaise, fever, and dysphagia. In these patients, inability to swallow saliva and stridor indicate imminent airway compromise. The most feared complication is airway obstruction due to elevation and posterior displacement of the tongue and edema of the glottis.[5] The presence of swelling in the neck and floor of the mouth, edema of the glottis, makes it difficult to anaesthetize the patient. Aggressive use of intravenous antibiotics and surgical decompression with removal of source of infection and airway management is mandatory to prevent mortality.[6]

CASE REPORT

A 53-year-old female was admitted to ENT department of Cosmopolitan hospital. Trivandrum. The patient had history of known compliance of DM on T.Metformin 500mg+ T.Glipizid 5mg BD Inj. Human insulin regular 30/70 40u-0u-36u, hypertension on T.Losartan 5mg OD, and dyslipidemia on T. atorvastatin mg HS and sleeplessness on T.Escitalopram 5 mg since past 2-5 years and no known drug allergies.

The patient's history of present illness was four days of significant pain and diffuse swelling on the submental area, which slowly progressed to extensive bilateral neck and facial swelling tenderness and erythema. On clinical examination calculi was present along the left submandibular duct. Nose and ears were normal. She had difficulty swallowing oral secretions and eating, but had no respiratory distress.

Initial vital signs were a heart rate of 70 bpm, blood pressure 140/80 mmHg, and a temperature of 37°C.The patient had an oxygen saturation of 98% on room air. A complete blood count was performed that revealed a white blood cell count of 11000cells/microlitre, blood sodium 132 mEq/L, blood potassium 3.17mEq/L,CRP 5.08 mg/dl, serum amylase; 441U/L, serum lipase 76 U/L. Intravenous (IV) ceftriaxone 1g BD and metronidazole 500 mg TDS were given empirically.

Physical examination revealed submental swelling that was tender to palpation. The diagnosis was bilateral submandibular, submental, sublingual space infection leading to a presentation of Ludwig's angina. The patient was brought to the operating room in conjunction with otolaryngology for incision and drainage of left submandibular, submental spaces approximately 25 ml of purulence was drained.

The white blood cell count on post-op day one was 10200cells/L (down slightly from the prior day) and dropped significantly 9500cells /L on post-op day two, which suggested the patient was responding well to the treatment.

The patient was continued on the same IV antibiotics and a daily chlorhexidine rinse was prescribed. The patient reported feeling much better. By the 3 day, hER symptoms decreased and the patient was discharged.

DISCUSSION

Ludwig's angina is described as a severe and quickly progressing cellulitis involving multiple facial spaces of the face and neck. The submandibular spaces bilaterally are the most commonly affected with the possibility of further spread to deeper spaces. Infection of the submandibular space can itself cause airway compromise, as the floor of the mouth and tongue are displaced superior and posterior. Further spread of the infection to the lateral pharyngeal and retropharyngeal spaces may cause more significant respiratory complications. Involvement of the cardiovascular system may also be possible as the infection continues to track downwards to the mediastinum and pericardium.[7,8,9]

Antibiotics should be initiated as soon as possible. Antibiotics should initially be broad-spectrum and cover gram-positive, gram-negative, and anaerobic organisms. Combinations of penicillin, clindamycin, and metronidazole are typically used.[3] Recent case reports have advocated the use of intravenous steroids.[10,4,11] In these reports, corticosteroid administration potentially avoided the need for airway management. To date, there are no randomized controlled trials that demonstrate the efficacy of corticosteroids in patients with Ludwig's angina. Up to 65% of patients with Ludwig's angina develop suppurative complications that require surgical drainage.[3,12,13] Physical examination alone is insufficient in determining which patients require a surgical procedure. In a recent study of deep neck space infections, the clinical exam underestimated the true extent of infection in 70% of patients.[14] As a result, imaging is indicated in patients with Ludwig's angina once antibiotics have been administered and decisions in regard to airway management have been made. Although plain films can demonstrate submandibular soft-tissue swelling, they are inadequate in detecting patients who require surgical drainage. As a result, a CT scan with intravenous contrast is recommended to detect patients who have developed suppurative complications.[14]

CONCLUSION

Management of Ludwig's angina should be based on patient's clinical condition. It is essential to identify Ludwig's angina in the earlier stages of the disease, so that it is easier to manage. In advanced cases, airway management and surgical drainage with organism specific antibiotic therapy are important to avoid complications. The present case describes a typical case of Ludwig's angina. This is a life threatening condition, which requires early intervention along with an interdisciplinary team when multiple systems are involved.

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