Case Report

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Ludwig's Angina in a Parturient: A Case Report

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Abstract

Introduction: Ludwig's angina is a rare but life threatening cellulitis of the soft tissue involving the floor of the mouth. Although Ludwig's angina is a rare condition, it must be kept as a differential in the clinical setup when a patient presents with a neck swelling.

Case Report: A 28 year old multigravida with 31 weeks 4 days gestational age presented with a swelling over the right side of the neck since 8 days. Patient also complains of toothache since past 5 days. The swelling was sudden in onset and progressed to attain the present size. It was associated with breathing difficulty since past 1 day. It was also associated with pain over the region. She had difficulty in eating solid food due the restriction in mouth opening due to the swelling. She was on liquid diet since past 7 days. She was diagnosed with hypothyroidism and was on Tab. Thyroxine 50 mcg.

On physical examination, she is a moderately built and nourished female, vitals were stable. Examination of the head and neck revealed a diffuse swelling of size 10x10 cm over the right side of face extending from the right mastoid till the right oral commissure. Superiorly it extended up to 1 cm below right eye and inferiorly till the sternocleidomastoid origin.

Total leucocyte count of 5.59 thousand/mm^3. After admission, antibiotics were started. Incision and drainage was planned for the patient. Intraoperatively, patient was tracheostomized due to restricted mouth opening and difficult intubation. After induction, vertical incision was made and about 100 ml of pus was drained from the swelling on the right side. Post-operative period was uneventful. The patient was discharged on antibiotics and tracheostomy care.

Conclusion: Ludwig's angina should be kept in mind with this type of presentation. It can be life threatening if the treatment is improper, but intervention and subsequent correction can clear the symptoms completely.

Keywords: Dental caries; Fiberoptic; Ludwig's angina; Periodontal abscess; Pregnancy; tracheostomy.

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Key Messages: In Ludwig's angina, the treatment is aimed primarily at protecting the airway the most common cause of death is asphyxiation from airway obstruction.

Airway management options include oral or nasal intubation, fiberoptic intubation or tracheostomy. Nasal intubation can be attempted by experienced personnel if the intraoral extension is minimal.

Flexible fiberoptic nasal intubation is the favoured method but arrangements for emergency awake tracheostomy must be in place before any airway intervention is attempted.

It can be life threatening if the treatment is improper, but intervention and subsequent correction can clear the symptoms completely.

INTRODUCTION

Physiologic changes in pregnancy may predispose pregnant women to oral health problems. However, most women are not counselled on oral health during pregnancy. Lack of proper oral health care predisposes pregnant women to odontogenic infections, which can lead to severe complications.

CASE REPORT

A 28 year old multigravida with 31 weeks 4 days gestational age presented to the ENT out-patient department with a history of swelling over the right side of the neck since 8 days. Patient also complains of toothache since past 5 days for which treatment was taken in a local hospital. The swelling was sudden in onset and progressed to attain the present size. It is associated with breathing difficulty since past 1 day. It is also associated with pain over the region. She doesn't give any history of fever, cough, or any other symptoms of upper and lower respiratory tract infection. There is no history of any discharge from the swelling or from the oral cavity. She had difficulty in eating solid food due the restriction in mouth opening due to the swelling. She is on liquid diet since past 7 days. Prior to this episode, the patient had been healthy and denied any recent weight loss, breathlessness or similar occurrence on the other side. She was diagnosed with hypothyroidism about 20 days prior to this episode and is on Tab. Thyroxine 50 mcg. She has a previous history of undergoing lower segment caesarean section 4 years back under spinal anesthesia which was uneventful. There is no other significant past or family history.

On physical examination, she is a moderately built and nourished female. The patient's heart rate was 84 bpm and blood pressure was 110/70 mmHg, respiratory rate was 16cpm and SpO_2 was 99% at room air. Her skin was warm and dry, and the oral mucosa was moist. No jugular venous distension, goitre or lymphadenopathy were appreciated. Cardiac evaluation revealed a regular rhythm and no murmurs. Examination of the lungs and abdomen and central nervous system were unremarkable. There were no deformities or enema of the extremities and distal pulses were present and equal bilaterally. Examination of the head and neck revealed a diffuse swelling of size 10x10 cm over the right side of face extending from the right mastoid till the right oral commissure. Superiorly it extended up to 1cm below right eye and inferiorly till the sternocleidomastoid origin.

Routine chemistry, complete blood count were normal with total leucocyte count of 5.59 thousand/ mm^3. Renal function tests and Liver function tests were within normal limits.

Electrocardiogram revealed a sinus rhythm with no obvious changes in the waves.

After admission, Inj. Ceftriaxone 1gm intravenous BD was started. Incision and drainage was planned for the patient. The patient was taken up for the same on 01/07/2022. Intraoperatively, after discussion with the surgeons, patient was tracheostomized in view of restricted mouth opening, difficult intubation and the risk of rupture of the pus intraorally if intubation was attempted. After induction, vertical incision was made and about 100 ml of pus was drained from the swelling on the right side. Post-operative period was uneventful. The patient was discharged on antibiotics and tracheostomy care.

DISCUSSION

Ludwig's angina is a diffuse cellulitis of the soft tissue involving the floor of the mouth and neck. It involves three compartments of the floor of mouth, the sublingual, submandibular and submental. The infection is rapidly progressive leading to potential airway obstruction.[1]

The most common aetiology is a dental infection in the lower molars, mainly the second and third, which accounts for over 90% of the cases. Any recent infection or injury can predispose the patient to develop Ludwig's angina.[1,2]

Predisposing factors include diabetes, oral malignancy, dental caries, alcoholism, malnutrition, and immunocompromised status.

The infection begins in the subgingival pocket and

spreads to the musculature of the floor of the mouth. It then progresses below the mylohyoid line which indicates that it has moved to the sublingual space. The infection usually spreads lingually rather than buccally as the lingual aspect of the tooth socket is thinner. The disease is usually polymicrobial. The most common organisms include Staphylococcus, Streptococcus, Peptostreptococcus, Fusobacterium, Bacteroides and Actinomyces.

The treatment is aimed primarily at protecting the airway the most common cause of death is asphyxiation from airway obstruction controlling the infection with antibiotic therapy and in cases of well established infections, surgical draining.

Airway management options includes oral or nasal intubation, fiberoptic intubation or tracheostomy. Nasal intubation can be attempted by experienced personnel if the intraoral extension is minimal.

Flexible fiberoptic nasal intubation is the favoured method but arrangements for emergency awake tracheostomy must be in place before any airway intervention is attempted. In our patient, there was a risk of intraoral spread of the pus if oral or nasal intubation was attempted. There was no extension to the anterior part of the neck in this case and hence tracheostomy was chosen as the best option.[3]

Broad spectrum antibiotic intravenously are the first line of treatment. These should cover gram positive, gram negative bacteria and anaerobes. Most commonly used antibiotics are Ampicillin Sulbactam or Clindamycin. Dental extraction is recommended if the source of the infection is odontogenic. For patients who do not respond to initial antibiotics and develop a fluid collection on imaging, needle aspiration or surgical incision and drainage can be performed.[1,3]

Surgical drainage is indicated in cases of suppurative infections: purulent needle aspirate, crepitus, fluctuance and soft tissue air. The aim is to decompress the fascial compartments of the neck and evacuating the pus.[1,2]

CONCLUSION

Ludwig's angina should be kept in mind with this type of presentation. It can be life threatening if the treatment is improper, but intervention and subsequent correction can clear the symptoms completely. The underlying aetiology should be searched properly to avoid recurrence. Surgical intervention of any kind should be preplanned and proper counselling of the patient should be done.

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