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Case Report

Ludwig's Angina in 2nd Trimester of Pregnancy: A Case Report and Literature Review

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Abstract

Purpose: Women in pregnancy have a predisposition to various infections that can quickly become fatal. Ludwig's angina is a rapidly spreading infection that involves the submandibular, submental and sublingual spaces. It often occurs after infection of a mandibular tooth. The growth can obstruct the airway, causing respiratory difficulty making this diagnosis potentially fatal. Careful monitoring and rapid intervention are warranted, when facing such an infection.

Case description: We describe a 29-year-old female with 24 weeks of gestation that developed Ludwig's angina after the extraction of a right mandibular molar tooth. She presented with molar pain, fever and a mandibular abscess that progressed causing problems with swallowing and speaking clearly.

Conclusion: With quick response to the signs and symptoms of Ludwig's angina, steps can be taken such as proper antibiotic treatment to ensure clearance of infection and protection of airway. Patients who present with these types of infection are at risk of systemic illness leading to infection of the fetus. This is one of the few reported cases of this disease occurring during pregnancy, and the only reported case occurring in the second trimester. This case report and literature review highlights the importance of emphasizing and ensuring oral hygiene as routine care during pregnancy.

Keywords: Ludwig's angina; Pregnancy; Infection

Introduction

Ludwig's angina (LA) is a rapidly spreading life-threatening infection of the floor of the mouth that involves the submandibular, submental, and sublingual spaces [1,2]. Airway compromise is the leading cause of death in these patients, followed by septicemia [3,4]. Odontogenic infection accounts for most LA cases. In adults, periapical abscesses between mandibular molars are the most common etiology, particularly between the second and third molar [2,3]. Thus, LA is commonly seen in those with poor dentition or who are immunosuppressed [4,5]. Common presenting symptoms are drooling, dysphagia, fever, chills, and sitting or standing leaning forward and supporting the upper body with hands on the knees or on another surface (tripod position) which may suggest airway compromise [3,6]. During pregnancy the immune system is compromised due to the physiological, hormonal and anatomical changes the body undergoes to sustain and promote the healthy development of the fetus. These changes may affect periodontal tissues which may become more sensitive and susceptible to irritation by plaques [1,2,5,7]. This can worsen due to the changes in eating patterns that occur during pregnancy, such as an increase in consumption and often not accompanied by changes in hygiene [5]. Odontogenic infections have the potential to develop rapidly, and in pregnancy it can develop at an even faster rate and become complicated due to mild immunosuppression [7]. Thus, these infections, if not treated promptly, can present with severe morbidity that can affect mother and fetus [4,5,6]. Increasing evidence suggests that there is a link between periodontal disease, preterm delivery and low-neonatal birthweight. We present the case of a Hispanic 29-year-old that was diagnosed with LA in her second trimester to highlight the importance of recognition, prevention and treatment of oral health problems in pregnancy.

Case Description

Case of a 29-year-old female G5P2A2 with two previous Cesarean deliveries at 24 weeks GA that presented with a right submandibular abscess after right molar breakage. The patient said her right molar tooth broke 4 months before admission and was removed by a Maxillofacial specialist. Three days after removal, she developed limited mobility and severe pain in her mouth, which radiated to her neck. The next day, she began experiencing fever and chills as well as pus oozing from the right molar denture. On arrival at our institution, she was evaluated: a non-stress test (NST) was reassuring for GA, and her vital signs were only remarkable for fever. She was unable to lay flat and was found drooling with limited speech and difficulty swallowing, as shown in Figure 1. A computed tomography (CT) scan of the area showed a right submandibular abscess measuring 0.7 x 1.2 x 2.5 cm with a tract connecting into the alveolar recess of the right molar tooth with associated soft tissue edema, presented in Figure 3. The maxillofacial service was consulted due to suspected diagnosis of Ludwig's angina (LA) and performed incision and drainage. She was then placed on IV antibiotics by the Infectious disease service. Due to the possible etiology of the abscess and considering the usual mouth flora, consisting of gram positive and anaerobe organisms, ampicillin-sulbactam, was chosen as a proper antibiotic. She was discharged after 7 days of admission with follow-up scheduled with maxillofacial services, and NST at the time was reassuring for GA. She continued to have her prenatal care of our high-risk services without further complications. At 36 1/7 weeks GA, she presented to our Obstetrics-Emergency Room with regular uterine contractions and a pelvic exam that was progressing in dilation. The obstetric sonogram at admission showed gestational age by sonogram at 35.2, gestational age by last menstrual period at 36.1, with anterior placenta, an amniotic fluid index of 15 and an estimated fetal weight of 2825 grams. Due to two previous cesarian sections (C/S), she opted for a repeat C/S. She delivered a female that weighed 2590 grams with an Apgar score of 8 and 9, at 1 and 5 minutes respectively. There were no complications. She was discharged after routine postpartum care. At postpartum evaluation in outpatient clinics, she denied any complications and was discharged from our services. Due to this being one of the few reported cases of Ludwig's angina during the second trimester of pregnancy, the patient was approached with the possibility of presenting it as a case report and gave permission for the distribution of the case and her pictures while afflicted by the condition.

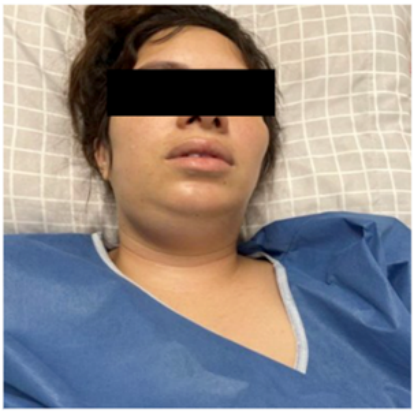

Figure 1: Patient with submandibular abscess at presentation.

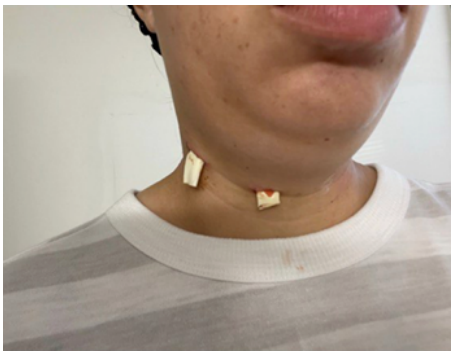

Figure 2: Patient after incision and drainage procedure.

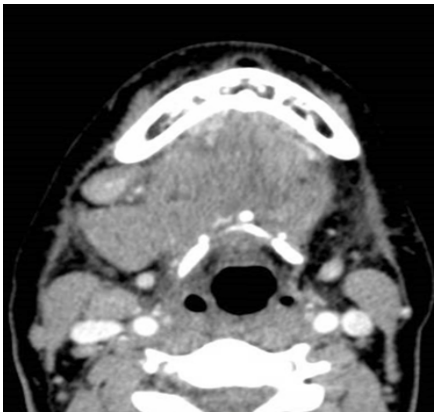

Figure 3: Right submandibular abscess formation measuring approximately 0.7 x 1.2 x 2.5 cm, which appears to show a subtle tract connecting into the alveolar recess of the right molar teeth.

Discussion

Ludwig's angina is a preventable rapidly developing life-threatening condition. Management of a patient with LA requires protection of the airway, early aggressive antibiotic therapy, and incision and drainage when appropriate (Figure 2) [5,8]. The physiological changes secondary to pregnancy and the possible effects that treatment may cause perinatally must be considered in the evaluation of these patients. Mild immunosuppression during pregnancy predisposes the patient to infections and to more complications [5,9]. These include extension of the infection to the placenta and fetus, leading to premature delivery [2]. Due to the underlying mortality associated with Ludwig's angina and other rapidly spreading odontogenic infections, dental care should not be differed or postponed during pregnancy. Furthermore, dental infections should be treated promptly to lower the risk of developing systemic illness in the mother and fetus. Interestingly, dental care and procedures can be safely done during the second trimester of pregnancy to avoid any complications and improve the mother's comfort and well-being [1,7,10]. Since obstetricians are primary care physicians during pregnancy, they should educate and emphasize the importance of good oral health and routine dental visits as part of antenatal care. Moreover, health care professionals should also consider the importance of oral health as part of antenatal care since early recognition and treatment of life-threatening conditions may contribute to a positive outcome for the mother and fetus.

Author contributions

Dr. Maria Isabel Hawayek contributed to the conception and design of the work, acquisition and treatment of the patient. She helped in drafting the work as well and is agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Miss Valeria Del Toro contributed to the conception and design of the work, acquisition and treatment of the patient. She helped in drafting the work.

Dr. Alberto De La Vega contributed to the conception and design of the work by aiding in the drafting of the work and reviewing it critically for important intellectual content.

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