

Infratemporal, Masticator Space Infection and Orbital Abscess Following Carious Maxillary First Molar Extraction in a Four Month Pregnant Patient. A Case Report

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Abstract

Odontogenic infections lead to life-threatening complications once they reach potential fascial spaces due to decreased immunity in pregnancy. It may also occur due to patient negligence, delayed diagnosis and mismanagement. Infratemporal space infection is a rare but a serious sequel of odontogenic infection. We report the case of a 20 year old, four months pregnant patient with carious left maxillary first molar with fascial space infection. Following extraction of this tooth and despite appropriate antibiotics the patient developed infection in the infratemporal and masticator space, followed by a orbital abscess.

Keywords: Abscess, odontogenic, cellulitis, extraction (ASH & KMDC 20(1):69;2015).

Introduction

Fascial space infections are one of the common infections of head and neck region. They can be life threatening and may lead to serious complications if not treated properly¹. On the other hand pregnancy is an altered physiological state with decreased immune functions that affects almost every system of the body¹. The combination of pregnancy and facial space infection may pose a serious health problem to both mother and fetus.

Tooth extraction is the most frequent procedure performed in Dental outpatient department and clinics but rarely may lead to serious complications.

For instance, the infection originating in the infratemporal space may spread to the cavernous sinus through venous plexus². It may also spread to the orbit through the valveless ophthalmic veins³. The masticator space is of great importance in head and neck region. Abscess in this space is rare but life threatening as this space contains branches of maxillary artery and pterygoid venous plexus⁴. Few cases of this diagnostic dilemma have been reported in literature⁴⁻⁵. Minimal local data reporting this rare complication of tooth extraction is available. Therefore, the aim of reporting this case of infratemporal, masticator space infection leading to orbital abscess after extraction of a maxillary first molar in a pregnant patient is to alert the clinician to be more vigilant in diagnosis, prompt management and follow up of odontogenic infections especially in patients with comorbid and /or having altered physiological state.

Case Report

A 20 year old four months pregnant patient was referred to the Maxillofacial department in Abbasi

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Shaheed Hospital by a general dentist on May 2014 with massive swelling on her left side of face which was extending from lower border of mandible up to orbital area which closed the eye. She was suffering from severe pain in her carious left maxillary first molar tooth two weeks ago. She went to a nearby general dental practitioner who extracted the offending tooth. According to her the extraction was simple and atraumatic. The dentist prescribed her antibiotics for seven days. She took the medicine regularly but the pain did not subside. After one week of tooth extraction swelling appeared on left side of face which gradually increased in size. On palpation swelling was tender, hard, warm, diffuse and shiny in appearance. A provisional diagnosis of abscess with surrounding cellulitis was made. She had fever 100° F, was conscious but irritable due to pain. Mouth opening was limited up to 6 mm. Needle aspiration done under local anaesthesia was non productive.

The patient was admitted to the Maxillofacial ward for management. Gynaecological opinion was taken for her maternal and fetal health status and medications during pregnancy. Intravenous infusion of 1 liter normal saline, 1 liter dextrose water stat was started with inj. Ceftriaxone 1.2 grams I/V and inj. Acetaminophine I/V. The baseline investigations such as complete blood picture (CBC) and erythrocyte sedimentation rate (ESR), blood sugar levels were performed in order to rule out systemic involvement. On the following day, the swelling continued to increase in size and pus also started to ooze from lateral canthus of left eye. Ten ml. of oozing pus was collected and sent for culture and sensitivity. Magnetic resonance imaging (MRI) was advised and report showed that there was an irregular marginated collection in subcutaneous tissue of eye lid. The deep margin of collection was abutting against left frontal, maxillary and zygomatic bones with swelling of muscles in infratemporal fossa and masticator space as shown in the MRI images Fig. 1. The patient was then shifted to operation theater (OT) for incision and drainage under local anaesthesia Fig. 2. After Incision and drainage the patient was kept on Injection Piperacillin 1.2 gm I/V thrice

a day (TDS) for five days, Inj. Metronidazole 400 mg I/V (TDS) and Inj. Dexamethasone (TDS). The pus drained was sent for culture and sensitivity.

Three days postoperatively, swelling subsided considerably and patient was discharged after seven days of admission. Weekly follow up was done and patient recovered fully Fig. 3. Patients verbal consent was taken for the pictures printed.

She continued to improve on follow up visits for three months and showed remarkable improvement of infection. Mouth opening improved up to 30 mm. Visual acuity and vision was intact as per ophthalmic review. Regular gynaecological visits were arranged and they were uneventful. The patient delivered a healthy baby girl on expected date of delivery.

Discussion

This case highlighted the difficulty in clinical diagnosis of this rare complication of a routine dental extraction especially in pregnant females. Our impression, given the time passed between the extraction and the development of symptoms, was that the patient underwent reactionary haemorrhage associated with the pterygoid venous plexus that gave rise to formation of haematoma in infratemporal fossa. The infratemporal haematoma got infected and infection may spreads to masticator space and other potential facial spaces in the vicinity.

The MRI clearly showed the extent of infection and its effect on structures within the masticator space and Infratemporal fossa. MRI scanning is a useful imaging modality in the diagnosis of pathologies of infratemporal fossa⁶.

The culture and sensitivity result of the pus sent after incision and drainage was non remarkable and this is in agreement with most reported cases, microbial culturing showed no particular organism isolation. In addition to the polymicrobial nature of odontogenic infections, the reason might be multiple antibiotic prescriptions before final diagnosis.



Fig. 1. Axial view of MRI showing showing infection in left infratemporal space in pregnant female.



Fig. 2. Incision and drainage under local anaesthesia in Emergency operation theatre of peri-orbital abscess in a pregnant women with carious maxillary first molar.



Fig. 3. An out-patient picture one week after discharge showing clinical improvement.

Infratemporal fossa infection occurs secondary to odontogenic infections which commonly originates from mandibular molars^{5,6}. Abscesses are rare and potentially dangerous complications. Besides, clinical diagnosis tends to be challenging as a result of non-specific signs and symptoms. Different manifestations might be observed depending on the specific anatomical feature involved in the infection including pain, fever, trismus in acute infection and trismus with swelling in chronic infection and even neurosensory deficit⁷⁻¹⁰. Trismus can be the diagnostic hallmark to distinguish infratemporal space infection from other conditions with facial swelling.

Therefore, in the management of odontogenic infections early diagnosis is very important, which is made through history, clinical examination and appropriate investigations.

Patient awareness programs must be initiated focusing on vigorous oral hygiene measures especially during pregnancy in prenatal, and postnatal clinics. In addition general female population should be encouraged for their oral hygiene maintenance.

Conclusion

Fascial space infections may lead to unpredictable outcomes during pregnancy. Clinicians must treat these infections with immense care and focus on early diagnosis and prompt management of the patient.

Conflict of interest

The author has no conflict of interest and no funding/grant from any organization.

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