



Management of odontogenic Space Infection - a Case Report

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ABSTRACT: *Background: Fascial space infections of the head and neck region are usually odontogenic in origin. An untreated or rapidly spreading odontogenic infections can be potentially life threatening. The present case report describes a patient with orofacial infections who required emergent incision and drainage. Conclusion: Fascial space infections of the head and neck region, though potentially life threatening, can be prevented by regular dental visits. Early recognition and treatment of the infections are necessary to prevent considerable morbidity and mortality, especially in younger patients where more care should be given for oral health. Successful results can be achieved for such patients who can be treated with Incision and Drainage, removal of etiologic factor followed by a combo of three antibiotics.*

KEYWORDS: *Odontogenic Space Infection, Incision and Drainage, Antibiotics, Extraction*

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I. INTRODUCTION

Dental disease is the underlying cause of most of inflammatory swellings which occurs either in or around the jaws. Inflammation may commence either at the root apices or gingival margins of erupted teeth, or in the soft tissues which surround and overlie the crown of an unerupted or partially erupted tooth. Inflammation around the apices of tooth root may result in the formation of pus. The pus tracks along the line of least resistance and perforates the bone at the site where it is thinnest and weakest and involves the surrounding soft tissues. Once the infection enters the tissues it may resolve, become localized or spread. The infections can also spread to a site, distant to its origin causing considerable morbidity and occasionally death. In cases of acute odontogenic infection, the oral and maxillofacial surgeon needs to know whether the inflammatory process is in a stage of abscess formation, requiring primary evacuation of pus and administration of antibiotics or a cellulitis that can generally be treated with antibiotics alone.¹ Infections of odontogenic origin are common cause of reporting to the dentist. They may lead to pain, discomfort and difficulty in opening mouth, thereby complicating the functional activities of oral cavity. In developing countries, lack of adequate nutrition, poor oral hygiene, tobacco use, areca nut chewing and smoking has increased the prevalence of odontogenic infections. Odontogenic infections can also provide a channel to deep neck space infections. The most common cause of these infections is poor oral hygiene. Odontogenic infections are common and can be fatal or life threatening calling for an essential early diagnosis. Management of these infections mainly comprises of airway management, antibiotic therapy and surgical intervention.²

Case Report- A 65-year-old female child reported to our oral and maxillofacial surgery department with a chief complaint of painful swelling in the right side of the face with difficulty in mouth opening and swallowing for the past two to three days. She had pain in lower right back region of jaw since 5-6 days and she was on medication for the same. Patient had applied balm over right cheek area last night and reported with swelling on the next day, patient had medical history of diabetes mellitus since six months and was on medication for the same. On extra oral examination, the vertical swelling extends superiorly from supraorbital rim and inferiorly up to submandibular region. Medial extension is from corner of mouth and laterally extends till tragus of the ear. The swelling is of size 10x10.5 cm. The skin over the swelling is erythematous, warmth and stretched with superficial necrosis (fig.1)



Figure 1

On intraoral examination the right lower second bicuspid was decayed with grade one mobility and tender on percussion. Buccal vestibular obliteration seen from 43 to 47 and cheek mucosa was also swollen. In maxillary canine region intra-oral swelling seen. A provisional diagnosis of right buccal, infraorbital, submental and submandibular space infection was given. Complete blood count was done, Hilton's method of Incision and drainage was performed under local anesthesia in relation to the right buccal space infraorbital space submental space and submandibular space, a consistent pus discharge was present along with multiple locules.(fig.2)



Figure 2

Corrugated rubber drains were placed in infraorbital (intraorally) buccal , submental and submandibular spaces (extraorally) and sutured with 3-0 silk. Followed by incision and drainage, the right lower 2nd premolar was extracted. Then the patient was started a combo of three antibiotics based on the body weight and age for a period of one week. Injection. Augmentin IV BID Injection. Metrogyl 400 mg (100ml) . Irrigation with betadine were done in all spaces on daily basis and once there was no evidence of pus discharge, the drains were removed after 48 hours. The infection and swelling was subsided after one week. All the blood values were found to be within the normal range. Then the patient was discharged from the ward. (Fig.3)



Figure 3

II. DISCUSSION

The most important treatment of infections is removal of the offending source and proving path of drainage. Ancillary measures such as pharmacotherapy are aimed as supportive measures for the host, especially in cases of immune compromise. They are not meant to replace surgical intervention unless the infection is very early in its stages of development. Infections should be treated as soon as possible. No benefit is gained by waiting for an abscess to form, as this delay may carry consequences and may be potentially fatal. Due to the typical acidic pH of infected tissue, injected local anaesthetics, which are more alkaline, become ionized and therefore would not be able to cross the nerve membrane and provide profound anaesthesia. The use of nerve blocks as well as adjunctive sedation may be beneficial in management of the apprehensive patient. Incision and drainage allows for decompression of infection, which will provide significant relief for the patient.⁵

The management of deep neck infections is troublesome due to the complex anatomy of the neck, polymicrobial etiology, and life-threatening complications that may arise. Intravenous high dose antibiotics (usually penicillin or cephalosporins and metronidazole), analgesic and fluid therapy in addition to establishment of surgical drainage and elimination of the source of infection stand-out to be the prime treatment plan of fascial space infections. Moreover, the inappropriate use of antibiotics, steroids, and nonsteroidal anti-inflammatory drugs may mask signs of infection and change the clinical presentation, making it more elusive, and also lead to a slow course of disease, delayed recovery, and the development of complications.⁶

Abscess formation in the orofacial region is relatively rare but it usually develops from an odontogenic location.⁷ Odontogenic infections are commonly caused by pericoronitis, dental caries, periodontitis, or complications from dental procedures. The second and third molars are often the etiological tooth for these odontogenic infections.⁸ A decayed tooth with an exposed pulp causes pulpitis, which, if untreated, develops into periodontitis. Pericoronitis or periodontitis can progress to alveolar osteitis or maxillary osteitis, which causes abscess formation in the orofacial region.⁹

III. CONCLUSION

Pre-existing dental infections are the commonest causes of fascial space infections of the head and neck region. The extension of the submandibular space infection to temporal region could be dangerous if overlooked. Regular dental visits may enhance early detection and treatment of dental ailments, thereby preventing development of fascial space abscess.

Fascial space infections of the head and neck region, though potentially life threatening, can be prevented by regular dental visits. Early recognition and treatment of the infections are necessary to prevent considerable morbidity and mortality, especially in younger patients where more care should be given for oral health. Successful results can be achieved for pediatric patients who can be treated with Incision and Drainage, removal of etiologic factor followed by a combo of three antibiotics.

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