

ACUTE FACIAL CELLULITIS: A RARE CASE REPORT

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Abstract

Background: Facial cellulitis is a life threatening, hard, diffuse, non-fluctuating soft tissue infection that is not confined and has a tendency to spread. **Case Report:** A 47-year-old female complaint of pain and swelling in left side of the face. On examination a diffuse shiny swelling evident in the left side of the face which was hard, tender, warm and non pinchable on palpation. The patient was managed by Incision & Drainage (I & D) on intra-oral deep vestibular incision, offending tooth was extracted and corrugated rubber drain was placed & followed with IV antibiotics for 3 days. On one week follow up patient had complete resolution of pain, swelling and trismus. **Conclusion:** Ophthalmic, ENT, and maxillofacial specialists perform a multidisciplinary approach to diagnose and treat facial space infection. Incision and drainage is mandatory and life-saving even if there is no fluctuation of swelling to allow drainage inflammatory fluids.

Keywords: Acute Facial Cellulitis, Inflammation, Incision and Drainage.

INTRODUCTION

Facial cellulitis is a potentially fatal widespread non fluctuant soft tissue inflammation that is not limited and has a tendency to spread. About 62 % of oral and maxillofacial space infections are odontogenic in origin [1]. In most cases, pulp necrosis, periodontal disease, pericoronitis, or per-apical lesions are the cause of severe odontogenic infections. Studies have shown that 2.7% to 3.4% of all dental emergency department visits in hospital settings are due to facial cellulitis [2]. Even with the use of IV antibiotics and surgical treatment, odontogenic infections have the potential to quickly spread to the deep cavities of the head and neck. Eventually, severe, perhaps fatal consequences can develop, including critical airway blockages, descending mediastinitis, cavernous sinus thrombosis, or septic shock [3].

The earliest possible identification of the infection source, the different clinical presentations of the infection (abscess, cellulitis, and necrotizing fasciitis), and the accuracy with which the number of fascial spaces involved is determined are all crucial in the management of these potentially fatal infections. It has been demonstrated that early tooth extraction and draining during the acute phase of facial cellulitis reduce the need for more invasive surgical operations and potential hospitalization [4][5].

Case Presentation

A 47-year-old female patient reported to the emergency department with the chief complaint of pain and swelling in left side of the face for the past 8 hours (Figure: 1). Patient was referred for maxillofacial opinion. Patient had no known medical history. Patient gave a dental history that she underwent dental treatment (Re-Root canal treatment – 23) 8 hours back. During the treatment, she developed gradual swelling and pain on left side of face. Extraoral examination revealed facial edema which was diffuse shiny swelling evident in the left side face on palpation it was hard, tender, warm and non pinchable. Swelling measured approximately 10*10 cm extending anteriorly from the nasolabial fold, posteriorly up to the posterior border of the ramus of mandible, superiorly above the infraorbital region involving both upper & lower eyelids and inferiorly up to the lower border of mandible. Intraoral examination revealed restricted mouth opening with obliteration of labial vestibular fold from 21 to 26 tooth regions. On referring her dental records, we came to know that gutta percha solvent was used during the root canal treatment in relation to 23. The patient developed pain and swelling immediately then the treatment was discontinued and patient was given oral antibiotics & analgesics. IOPA of the patient revealed that a vertical radiolucent line was present in relation to 23 (Figure: 2 vertical root fracture).

Considering the morbid condition of the patient, patient was admitted under oral and maxillofacial surgery ward. The patient was immediately started on IV antibiotics, analgesics & corticosteroids. Ultrasonography (USG) of the left face and neck regions suggested a 2.0*1.6 cm fluid collection in left cheek over the maxilla in the muscle plane and presence of a diffuse soft subcutaneous edema. Based upon the history given by the patient, the usage of gutta percha solvent (d – limonene oil which is natural substance extracted from orange oil) used by the dental surgeon for Re root canal treatment and clinical examination we came up with a diagnosis of acute facial cellulitis. I & D was planned under local anaesthesia. An informed consent was obtained from the patient.



Figure 1: Facial Cellulitis in left side of the face



Figure 2: Preoperative IOPA of 23 (vertical root fracture)

Surgical procedure

Under aseptic condition, Incision was performed as follows, 2% lignocaine with 1:80000 adrenaline was given as buccal infiltration. Intraoral deep vestibular incision was placed from 22 to 26 region using sterile blade No: 15 blade and Handle no: 3 (Figure: 3). A layered dissection was done till the bone. A burned brownish tissue was evident in relation to the peri apex of 23 region and it was excised in Toto followed by extraction of fractured 23 (Figure: 4). A copious saline and 5% betadine irrigation was done. Corrugated rubber drain was secured with 3-0 black braided silk sutures for drainage of inflammatory fluids (Figure: 5).



Figure 3: Incision made in labial sulcus at left maxillary canine region.



Figure 4: Fractured left maxillary canine tooth extracted (23).

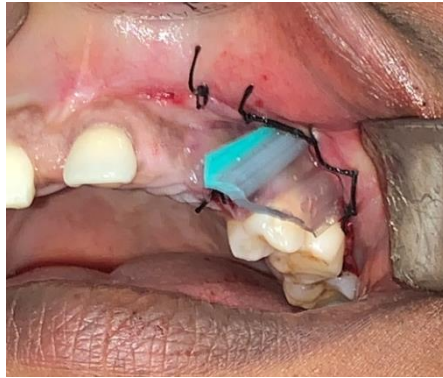


Figure 5: Drain secured on labial vestibular region

Patient was continued on systemic antibiotics (Cefixime 1g), analgesics (Paracetamol 1g), corticosteroids (Dexamethasone 8mg) and saline mouth wash twice for next 3 days. The corrugated rubber drain was secured for 3 days to facilitate drainage of inflammatory fluids. Gradual decrease in the size of the swelling was noticed. Complete resolution of facial cellulitis occurred in one week. (Figure: 6)



Figure 6: Complete resolution of swelling

DISCUSSION

Due to the perceived risk of complications, patients with facial cellulitis are generally hospitalized. In the head and neck areas, odontogenic infection can result in significant multi-space infections that can have fatal consequences [6]. The severity of the infection is typically taken into consideration when deciding whether to admit patients for treatment of acute odontogenic facial cellulitis. However, it may be challenging to distinguish

between localized/diffuse cellulitis and an abscess during the clinical examination of a swollen face and to identify the affected anatomical regions [7].

Sarah Arafat et al reported a 14-years-old girl suffering from facial cellulitis, trismus and dysphagia was caused by buccally positioned left maxillary third molar. The patient was treated by intra-oral incision at maxillary premolar region, antibiotic coverage and hourly warm saline mouthwash. Drainage of pus happened after two days through the incision. The offending tooth was extracted with local anesthesia. complete resolution of swelling and trismus occurred after two days [1]. The endodontic flare up is a real consequence that starts a few hours (or days) after root canal treatments and is characterized by the development of pain and swelling. Mechanical, chemical, and microbiological damage to the pulp or periapical tissues are the main causes of flare-ups. [8][9]. S.Makkar et al reported a similar case of edema due to orange oil while removing gutta percha. Patient was treated with antibiotics, corticosteroids, analgesics for 5 days, and antihistamines for 2 days. After 2 days, there was improvement in patients condition, and swelling was reduced [10].

In the present case we have seen the patient reported to us with pain and swelling in her left side of the face following Re Root Canal Treatment where gutta percha solvents was used. Various case reports suggest gutta percha solvent can cause facial cellulitis similar to our case [1]. So usage of solvents in Re Root Canal Treatment should be meticulous.

CONCLUSION

In conclusion, solvents can be harmful to periapical tissues. The apical extrusion of debris and solvent caused by solvent penetration through the vertical root fracture may irritate the periapical tissues, obstruct healing, and may cause allergic or hypersensitive reactions. Acute facial cellulitis requires a multidisciplinary approach to treatment that includes (i) A thorough physical examination and evaluation of the patient, (ii) Locating the infection's source, (iii) Anatomical considerations, (iv) Early surgical intervention, and (v) Administering the proper antimicrobial therapy. Regarding surgical management even if there is no fluctuation to allow inflammatory drainage, immediate incision is necessary and life-saving in cases of acute facial cellulitis.

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