

Necrotising Fasciitis of Odontogenic Origin : A Case Report

Dr. Neelam Singh¹, Dr. Natasha Gupta², Dr. Pusparaj Singh³

Assistant Professor^{1,2}, MS General Surgeon³, Department of Conservative Dentistry & Endodontics^{1,2}, Jamia Millia Islamia^{1,2}, New Delhi, Puspanjali Hospital³, Bulandshahr, U.P.

Abstract :

Necrotising fasciitis is known to occur in extremities, abdomen and perineum. Rarely does it occur in head and neck region. If it presents in head and neck it is a sequela to dental extraction especially when aseptic conditions are not maintained. Although a lot of predisposing factors contribute to it such as Diabetes Mellitus, chronic renal disease, peripheral vascular disease, malnutrition, advanced age, obesity, immunocompromised and alcohol abuse. This report presents with a patient between age group of 60 years with persistent pus discharge from right submandibular region with severe pain since 3 days. No predisposing factor was known. History of extraction of right mandibular molar two weeks ago was given by the patient from a private clinic in her village. This condition usually goes misdiagnosed and the condition is severe often leading to death. Timely diagnosis and surgical intervention is important for a good prognosis. The maintenance of aseptic chain prior to any procedure surely is important.

Keywords: Necrotising Fasciitis, Dental Extraction, Pain, Submandibular region.

Introduction

The military surgeons referred to it as the flesh eating bug, spreading rapidly to facial planes involving sub cutaneous tissues, fascia, skin. This may extend upto muscles and may be associated with foul smelling pus discharge and is commonly known as cervicofascial necrotising fasciitis due to odontogenic origin. It leads to thrombosed blood vessels and finally tissue death.¹ It is usually known to arise as a small wound which if left neglected would end up in abscess formation leading to falling of hairs of head and chin, exposing the bare bones.²

Necrotising Fasciitis is characteristically divided into 3 types depending upon the causative agent:

- (i) In cool and temperate climates it tends to be associated with group A *Staphylococcus aureus* or with *Streptococcus pyogenes*³ or with *Staphylococcus aureus*.
- (ii) In many cases (up to 60%) the necrotizing fasciitis may be polymicrobial, including one or more obligate anaerobes³
- (iii) In tropical climates, the condition can be caused by members of the family *Vibrionaceae*, which are of seawater origin⁴

Early stages of disease in head and neck region are usually go misdiagnosed as erysipelas or cellulitis.⁵

Patients present with symptoms like being febrile, tachycardic, dehydrated due to dysphagia secondary to oedema of neck and trismus.⁵ Its features is rapid, progressive liquefaction of subcutaneous fat and connective tissue below the skin.⁶ The fascial planes disintegrate leading to oedema and final release of tissue fluid finally blocking the venous and arterial supply leading to coliquative gangrene. The skin becomes

slightly mottled due to venous stasis, leading to blistering in later stages with loss of sensory perception.⁶ Oedema is the primary feature with 40 % of cases presenting with h gas.⁷

The predilection is seen in median age groups and usually the adult cases have a underlying chronic illness (immunosuppression, diabetes, alcohol/ drug abuse, malignancy, or chronic systemic disease). The skin initially becomes hot, smooth, tense, shiny due to underlying oedema and painful.⁸ In later stages it shows rapidly enlarging swelling with three zones of demarcation: a wide peripheral zone of erythema outside a zone of tender purple skin surrounding a central black necrotic area.⁹

Case Report:

A female patient aged between 60 years reported in OPD with severe pain since 10 to 12 days and pus discharge from right submandibular region since two days. Pain was severe and throbbing in nature. Patient was also febrile. On clinical examination patient had necrosis of skin in cervical submandibular region, extraoral sinus present with purulent pus discharge, hyperaemia and oedema. Patient gave a past dental history of extraction of right mandibular second molar two weeks ago and a medical history of chronic obstructive pulmonary disease.

On physical examination right submandibular region had swelling with complete involvement of right jaw. The cervical region on palpation was tender with necrotic patch over the swelling. Trismus was also present.

Vital parameters were as follows: Pulse rate – 100/minute, blood pressure – 130/96, temperature – 102° F, Respiratory rate – 28/minute, SPO2 – 90%.

Blood profile revealed leucocytosis

(24000/ mm³), blood sugar level random and fasting was found to be within limit, kidney function test and liver function test were normal, viral markers (HIV and HbsAg) were found to be negative.

Clinical diagnosis of cervical necrotising fasciitis of odontogenic origin was suggested.

Surgical Management:

Patient was started on antibiotic therapy i/v on the first day which included Piperacillin and Tazobactam 4.5 grams and metronidazole 400mgs three times a day. The next day the patient was submitted to surgical removal of necrotic tissues and debridement. Debridement of the lesion was done followed by intense irrigation of alveolar cutaneous fistula with physiologic normal saline and hydrogen peroxide initially, later on by normal saline and betadine solution. Irrigation was continued for 12 days. Meanwhile dressing of the wound was done with silverex nanocure gel for every 24 hrs also. On 13th day patient was discharged with prescription of oral antibiotics and anti-inflammatory for another 10 days. Patient was advised to report after a week for follow up. The wound had healed by secondary intention in 6 to 7 weeks. Patient was advised to undergo cosmetic correction by split graft at later stage but was not willing.

Discussion

Whenever a patient reports with an apparently innocuous wound with a history a systemic disease like in this case patient gave a history of chronic obstructive pulmonary disease necrotising fasciitis should be considered early. Often it goes misdiagnosed because prodromal period in which the synergistic consortia of bacteria are evolving may be 3 or 4 days before the phase of rapid proliferation and becomes an emergency condition often leading to sepsis and death.

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Immunologically compromised patients living in unhygienic conditions are more prone to it. A routine dental surgery or extraction plays a crucial role if aseptic cycle is maintained as in this case. This is because second and third molar root apices approach the mylohyoid insertion thus the infection can easily pass to subman-dibular region.

It has features like extreme rapid growth of disease, capacity to turn a subcutaneous tissue into putrid pulpy substance and characteristic smell which is peculiar and offensive and swelling causes unbearable pain to the patient. It may start from any small wound or a scratch. The rate of necrosis is not proportional to signs and symptoms.⁶ Initially it tends to appear as odontogenic space infection.¹⁰

In this case 60 years of aged patient with a known case of chronic obstructive pulmonary disease was diagnosed with NF. She had a history of dental extraction of right mandibular second molar. The patient was managed by giving broad spectrum antibiotics as the nature of this disease is

polymicrobial. A multi-disciplinary approach was there to manage the patient surgically. The complete debridement was done so that the entire microbes could be eliminated and healthy bleeding tissue was obtained. The wound was then packed with antibacterial solution soaked gauze and changed regularly. The wound healed by secondary intention in 6 to 7 weeks of time. Cosmetic intervention in later stages may be needed to correct the defect.

Conclusion

Necrotizing fasciitis is a rarely occurring infection in cervico-facial region and often goes misdiagnosed. Every dentist should be aware of the symptoms because origin of the disease is dental infection due to non maintenance of aseptic chain while performing dental procedures. It is very important that every dentist contributes towards proper aseptic cycle to be maintained and hence preventing the spread of this infection. Early recognition and correct treatment increases the prognosis of infection.

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Pre Operative:



Post Operative: One Year Follow Up.

