

MANAGEMENT OF NECROTIZING FASCIITIS : A CASE REPORT

Timotius Andi Kadrianto*, Indra Hadikrishna**, Eka Marwansyah Oli'i***

*Resident, Dept. of Oral and Maxillofacial Surgery, Dr. Hasan Sadikin, Fac. of Dentistry, Padjadjaran University, Bandung 40161, IndonesiaRSUP

**Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Padjadjaran University, Bandung 40161, Indonesia

***Department of Oral and Maxillofacial Surgery, Dr. Hasan Sadikin, Padjadjaran University, Bandung 40161, IndonesiaRSUP

Email : timoandikadrianto@gmail.com

1. ABSTRACT

Introduction : Necrotizing Fasciitis () in head and neck is a rare, progressive, and potentially NF fatal soft tissue infection that will cause a devastating outcome if mistreated. The aim of this article was to report a case of necrotizing fasciitis with clinical expression and management of disease. Necrotizing Fasciitis () in head and neck is a rare, progressive, and potentially fatal NF soft tissue infection that will cause a devastating outcome if mistreated. The aim of this article was to report a case of necrotizing fasciitis with clinical expression and management of disease.

Case Report : We reported a 57 year old female patient with swelling at chin region that become purulent and there was necrotic tissue at neck area. She was diagnosed with necrotizing fasciitis at submental region and from dental examination, we found multiple radices that was thought to be the source of infection. The treatment involves broad-spectrum antimicrobial therapy, incision and drainage, extensive necrotomy debridement. After surgical debridement, the wounds are packed with modern dressing which is changed frequently. Although these infections are rare, their lethal potential and early diagnostic signs must be recognized. Necrotizing fasciitis should undergo early surgical debridement to prevent delay in treatment.

Conclusion : Necrotizing fasciitis management requires adequate measures according to clinical guidelines for the management of odontogenic infections to prevent the spread of infection by considering the systemic conditions

Keywords : Necrotizing fasciitis, modern dressing

2. INTRODUCTION

Necrotizing Fasciitis () is a potentially fatal soft tissue infection, characterized by extensive NF tissue necrosis in the subcutaneous tissue, fascia and deep tissue, which usually occurs as a complication of odontogenic infections. is characterized by polymicrobial aerobic and anaerobic NF organisms indigenous to the oral cavity. The mortality rate of descending necrotizing mediastinitis was originally as high as 50%.^{1,2}

Early diagnosis combined with emergency extensive surgical debridement, removal of all affected soft tissues, appropriate broad-spectrum empiric antibiotic treatment and a multidisciplinary team approach are essential for successful treatment of necrotizing fasciitis.^{3,4} Broad-spectrum empiric bactericidal intravenous () antibiotics are generally always indicated in these cases be-IV cause all involved tissues cannot be completely eradicated until specific culture and sensitivity results are available to guide specific antibiotic regimens. The extensive tissue necrosis, including the skin, must be debrided thoroughly to halt the continued spread of the disease process. Removal of the offending source of the infection, aggressive surgical debridement, the use of initial broad-spectrum empiric antibiotics, and medical optimization of the patient are of paramount importance.^{2,3}

3. CASE REPORT

A 57 year-old female patient came to the emergency department of Dr. Hasan Sadikin General Hospital, complained with swelling at lower jaw, redness with necrotic skin at neck and swelling at chest region. About 1 month prior to admission, the patient complained of toothache at right lower tooth. About 3 weeks prior to admission, the swelling occurred at right lower jaw and about 2 weeks prior to admission, the patient complained the swelling at right lower jaw was extended to chin region. About 3 days prior to admission, the swelling got bigger accompanied with difficulty in swallowing and there was spontaneous drainage from right lower tooth. About 3 hours prior to admission the patient brought to Hasan Sadikin Hospital Emergency Department for further treatment.

Physical examination, the patient had high blood pressure, tachycardia, febrile temperature, and tachypnea; the lesion appeared reddish, febrile temperature and there was necrotic tissue (Figure 1.)

Intraoral was found that the patient had poor oral hygiene and there were multiple radices (Figure 2).



Figure 1. Extraoral appearance there were swelling at lower jaw; swelling and reddish at chin region

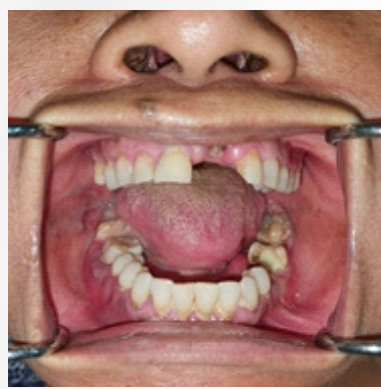


Figure 2. Intraoral : poor oral hygiene; mouth opening about 2.5 cm

Laboratory findings : leukocytosis, increased of platelets and creatinine, and decrease in SGPT level. Radiograph : Soft tissue density opaque without calcification, accompanied by multiple lucent in the submandibular and submental area, suggestive abscess and air column still opening (Figure 3).

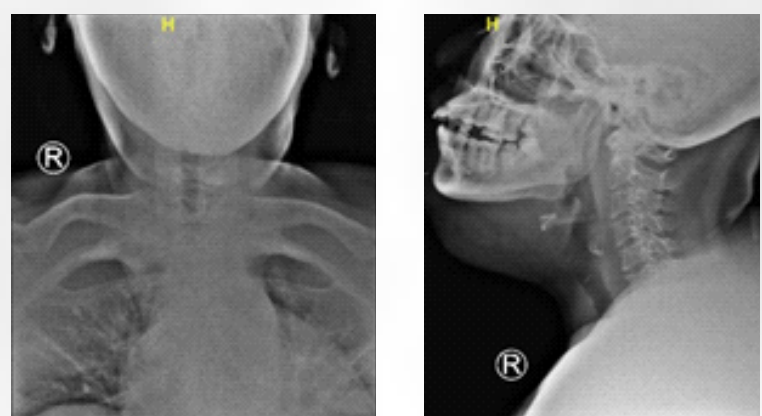


Figure 3. Neck soft tissue radiograph

Diagnosis :

- Necrotizing fasciitis due to submental abscess due to gangrene pulp of tooth 47 with Chronic apically periodontitis of teeth 15,21,27,35,36,37
- Controlled hypertension

Treatment :

- Mild rehydration to correct the electrolytes level
- Administered antibiotics
- Necrotomy debridement at submental under local anesthesia
- Extraction of teeth 15,21,27,35,36,37,47 to control the source of infection
- Checked culture sensitivity and antibacterial resistance (Figure 4).
- Modern dressing which is changed frequently every 3 days (hydrocolloid gel, and polyhexamethylene biguanide).



Figure 4. Post Necrotomy debridement and extraction



Figure 5. a. Post-operative day 1; b. Post-operative day 3; c. Post-operative day 6; d. Post-operative day 9

4. DISCUSSION

Necrotizing Fasciitis () is a rare, life-threatening complication from odontogenic and orophary-NF neal infections, infrequent, but lethal disease. Initial diagnosis can be made by history and physical examination but is often difficult. Plain radiographs of the neck and chest can demonstrate subcutaneous emphysema, a widened mediastinum, and pleural effusion.^{2,5,6}

Four factors that contribute significantly to morbidity and mortality Necrotizing Fasciitis of odontogenic origins : (1) Delayed treatment due to difficulty in recognizing the condition; (2) Inappropriate treatment; (3) Host debilitation; (4) The presence of polymicrobial infection.^{1,7}

High doses of intravenous antibiotics should be started empirically. Immediate broad-spectrum antibiotics which can be modified once culture results are obtained and surgical debridement of the lesion are the key to a good prognosis. All necrotic tissue must be removed, after the surgical debridement, wounds are packed with modern dressing which is changed frequently.^{3,8,9,10}

The modern wound dressing material to this case are honey, hydrocolloid gel, and polyhexamethylene biguanide. The unhealthy margins were removed during each exposure for the wound dressing; the wound bed was kept moist to allow for easier epidermal migration and neoangiogenesis.

5. CONCLUSION

Necrotizing Fasciitis () is a serious, life-threatening complication that can occur from odontogenic NF infection. Descending Necrotizing Mediastinitis can be decreased with clinical awareness, early diagnosis, empirical antibiotic treatment adequate, urgent surgical debridement followed by intensive supportive care and modern wound resurfacing.

6. REFERENCE

1. Tiwari M, Meshram V, Lambade P, Fernandes G. Cervicofacial necrotizing fasciitis of odontogenic origin: A case report. *Mouth and Teeth*. 2018;2(2):1–3.
2. Flynn . Principles of Management of Maxillofacial Infections. Peterson's Princ Oral Maxillofac TR Surg (Volume 1). 2012;841–60.
3. Diamantis S, Giannakopoulos H, Chou J, Foote J. Descending necrotizing mediastinitis as a complication of odontogenic infection. *Int J Surg Case Rep [Internet]*. 2011;2(5):65–7. Available from: <http://dx.doi.org/10.1016/j.ijscr.2011.01.004>
4. Report C. Odontogenic Cervical Necrotizing Fasciitis and Descending Necrotizing Mediastinitis in a Diabetic Patient : Literature Review and Report of a Rare and Fatal Case. 2018;1(1):6–9.
5. Rajanikanth , Madhuri B, Prasad K, Vineeth K, Kumarpal Munoyath S. Odontogenic infection BR progressing to necrotizing fasciitis: An unusual clinical emergence. *Oral Maxillofac Surg Cases [Internet]*. 2019;5(1):100084. Available from: <https://doi.org/10.1016/j.omsc.2018.10.006>
6. Weaver E, Nguyen X, Brooks . Descending necrotising mediastinitis: Two case reports and MA review of the literature. *Eur Respir Rev*. 2010;19(116):141–9.
7. Ochi N, Wakabayashi T, Urakami A, Yamatsuji T, Ikemoto N, Nagasaki Y, et al. Descending necrotizing mediastinitis in a healthy young adult. *Ther Clin Risk Manag*. 2018;14:2013–7.
8. Sutherland D. Wound healing. *Can Nurse*. 1987;83(6):36–7.
9. Jiwangga D. Clinical characteristic and management of descending necrotizing mediastinitis: a retrospective study, Dr. Soetomo Hospital, Surabaya. *J Vis Surg*. 2018;4(5):246–246.
10. Alvarez-Suarez J, Gasparini M, Forbes-Hernández T, Mazzoni L, Giampieri F. The Composition and Biological Activity of Honey: A Focus on Manuka Honey. *Foods*. 2014;3(3):420–32.