Chest Wall Necrotizing Faciitis from Odontogenic Infection. A Case Report

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Abstract
Fifty five years-old male submitted to the Emergency Department in Baghdad Medical City with right submandibular swelling necrotic ulcer with purulent discharge at anterior lower neck and upper chest area (Necrotizing Faciitis) with extreme fetid odor. This case report discusses the management and treatment outcome.

Introduction
Necrotizing Faciitis (NF) is a progressing infection of the fascia with subsequent skin, subcutaneous tissue and muscles’ involvement (Morgan, 2010). The term Necrotizing Fasciitis was coined by (Wilson, 1952). Historically NF has been described by Hippocrates as “great falling off of the flesh…was not like pus, but a sort of putrefaction…” Although it was first clearly in the late eighteenth century by Claude Pouteau, there was no unified term for it (McGurk, 2003).

The aetiology of NF could be infection by single or multiple micro-organisms. Streptococcus was found to be the most common (38%) causative micro-organism (Krieg et al., 2009). NF affects 4/100,000 of population per year with high 40% mortality rate. It is relatively rare in head and neck region, 1-10% from overall NF. Within the last decade (Blythe and Baker, 2010; Casey et al. 2014; Dillon, 2015; Hernández et al., 2017; Lanišnik et al., 2011; Olusanya et al., 2015; Dilton, 2015). NF as a complication of dental infection is uncommon. It has been documented that odontogenic infection could progress to NF in 1% (Dillon et al., 2015). However, it should be on the dentist’s mind as one of expected outcomes in ill managed dental infection cases in debilitated patients. The presented case report is an example of such conditions.

Case Report
An uncontrolled diabetic 55-years-old male attended Oral and Maxillofacial Department in Ghazi Alhariri Surgical Centre (Baghdad Medical City), with right submandibular swelling due to odontogenic infection. Patient had been poorly managed for two
weeks and was under steroid for unjustifiable reason. He was brought to emergency department with 15 * 15 cm necrotic ulcer with purulent discharge at anterior lower neck and upper chest area with extreme fetid odor. There were bilateral erythematous swellings extending from the lower border of the mandible to the upper half of the chest wall. (Figure 1a). Patient was systemically toxic, malaise, and feverish with difficulty in swallowing. His laboratory investigations showed WBC count of 23000/cm³, Hb 7 mg/dL and RBS 520 mg/dL.

Initial treatment involved stabilization with IV fluids, antibiotics (specify the types and dose of antibiotic) and glycemic controls (specify the type and dose). This was followed by aggressive surgical debridement of all the non-healthy skin and subcutaneous tissues. This was followed by removal of all upper and lower retained root (Figure 1b, c). After 10 days of systemic and local infection control measures, a split thickness skin graft was used to close the defect (Figure 1d). A secondary skin graft procedure was done 2 weeks later to complete wound coverage.

The above taken measures enable the patient survive this grave condition. He was kept under medical supervision to control his acquired adrenal insufficiency (Figure 1e).

Figure 1: a. bilateral erythematous swellings from the lower border of the mandible to the upper half of the chest wall. b. Aggressive surgical debridement of all the non-healthy skin and subcutaneous tissues. c. Removal of all upper and lower retained root. d. A split thickness skin graft used to close the defect. e. the patient kept under medical supervision.
Discussion
Because Necrotizing Fasciitis it is a potentially fatal condition it requires accurate diagnosis and aggressive management. Diagnosis of NF usually based on clinical, radiographical, CS test and histopathological examination. Clinically, Finger Test is suggested to confirm the diagnosis. This test is performed by making small incision down to the fascia. You will notice lack of resistance of the subcutaneous fat to the exploring finger with lack of bleeding. In addition you will get an extremely offensive brown colored fluid (dishwater fluid). CT scan usually reveals gas in the subcutaneous areas. Culture and Sensitivity test should not delay triple parenteral antibiotic therapy, which should be provided immediately. Biopsy should be taken from the adjacent normal looking tissue, but it should not delay surgical management (Frozen Section)

One of the adopted criteria for early detection of NF is Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC Score). The LRINEC score can detect early cases of Cervical necrotizing fasciitis CNF. Patients with a LRINEC score of >=6 must be carefully evaluated for the presence of Cervical NF (Sandner et al., 2015).

Early diagnosis and radical management are important to maximize the chances of a good outcome (J. Blythe, N.J. Baker, 2010). Prof Mark McGurk. Management of NF is both medical and surgical. It is important to state that this condition could be mistaken as usual cellulitis in its early stages and the dentist should deal with this condition with extreme suspicion. Any delay in diagnosis might lead to grave sequences.

The recommended management line includes medical support, antibiotics, aggressive surgical debridement, followed by reconstruction (McGurk, 2003). Medical support involves ICU admission. Gram +ve, Gram –ve and anaerobic microbes should be targeted with antibiotic treatment. All necrotic tissue with overlying skin should be removed until fresh bleeding points are reached. Reconstruction is considered when the patient’s condition is stabilized and the local wound condition permits.

Conclusion
Odontogenic infection can be fatal if poorly managed. NF is severe rapidly progressive soft tissue infection that should be managed emergently (medically and surgically) to avoid life threatening complications.

Reference


