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Case Report

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Necrotizing Cervico-Thoracic Fasciitis in the City of Malanje - Angola: Case Report

Nelson J Fernandes Graça[1*], Rafael Vicente Rosa[2], Simão Zola Ramos André[3], Joyce Corrêa Graça[4] and Cintia Flores Ferreira Rosa[5]

[1]*Master in Dentistry from the Fluminense Federal University (UFF), Specialist in CTBMF from the Unigranrio University (UNIGRANRIO), Specialist in HOF from the Federal Council of Dentistry,*

Specialist in Judicial Expertise from Faculdade Focus, Coordinator and Professor of the Specialization in CTBMF at Faculdade EnsinE - Campus de Volta Redonda, ATNA Dentistry and Teaching - Brazil

[2]*Master's student of CTBMF - CTBMF Specialist - Unifoa, Professor of the Specialization in CTBMF at Faculdade Ensin-E - Campus Volta Redonda, ATNA Dentistry and Teaching - Brazil*

[3]*Degree in Dentistry from the Instituto Superior Kalandula de Angola Head of the Dental Medicine Section of the Regional Hospital of Malanje - Angola, Student of the Specialization in CTBMF at Faculdade EnsinE - Campus Volta Redonda, ATNA Dentistry and Teaching as a member of the scientific/professional exchange Brazil/Angola*

[4]*Specialist in Orthodontics from Universidade Redentor - UniRedentor, Specialist in Geriatrics and Gerontology from the Fluminense Federal University (UFF)*

[5]*Student of the Specialization in CTBMF at Faculdade Ensin-E - Campus Volta Redonda, ATNA Dentistry and Teaching - Brazil*

***Corresponding author:** Nelson J Fernandes Graça, Master in Dentistry from the Fluminense Federal University (UFF), Specialist in CTBMF from the Unigranrio University (UNIGRANRIO), Specialist in HOF from the Federal Council of Dentistry, Specialist in Judicial Expertise from Faculdade Focus, Coordinator and Professor of the Specialization in CTBMF at Faculdade EnsinE - Campus de Volta Redonda, ATNA Dentistry and Teaching - Brazil.

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Abstract

Cervico-thoracic necrotizing fasciitis (TNCT) is a rare, usually rapid, aggressive, and progressive infection of the superficial fascia and subcutaneous adipose tissue. It can develop from an odontogenic infection that spreads to the facial and deep planes with a high degree of lethality. Surgical treatment and early diagnosis are imperative for the patient's recovery, as well as immediate antibiotic therapy. This paper presents a case of TNFN in a young, female, black patient with extensive cervico-thoracic lesion treated at the General Hospital of the city of Malanje in Angola, Africa, in partnership with the team of professors of the Specialization Course in Oral and Maxillofacial Surgery and Traumatology of ATNA Dentistry and Teaching, in the city of Volta Redonda - RJ, Brazil. which maintains a scientific/professional exchange and humanitarian aid project with the city of Malanje.

Keywords: Cervico-thoracic necrotizing fasciitis; necrotizing fasciitis; tissue necrosis

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Introduction

Cervico-thoracic necrotizing fasciitis (TNCT) is an infection of the soft tissues that causes necrosis of the subcutaneous tissue and facial planes. It is polymicrobial and has a tendency to rapid dissemination, and can be classified, in these cases, as type I, when caused by a mixed flora of obligate anaerobic bacteria and other facultative anaerobic bacteria not belonging to group A, and type II, when GAS (Streptococcus group A) isolated or associated with Staphylococcus aureus is involved (WOLF H, OVESEN T. 2008; KANG-AUGER et al., 2021) [1, 2]. TNCT can occur at all ages, but most patients are younger than 40 years old and there is no predilection for gender or race, affecting even healthy people (MURRAY et al. 2012; RIAZ N. et al., 2018) [3, 4]. TNCT is, in most cases, odontogenic in origin, involving dental abscesses, chronic periodontal disease, or pharyngeal infections, evolving with extensive necrosis and gas formation in the underlying subcutaneous and fascial tissue, with a high mortality rate (approximately 40%) (KUNCIR et al. 2003, LIMA Jr MO et al., 2020, SUEHARA AB, et al. 2008, VALLIM et al., 2016) [5-8].

Immunosuppression, diabetes mellitus with peripheral vascular diseases, liver diseases, immunological diseases, arteriosclerosis, and malnutrition are important risk factors that considerably increase the degree of morbidity and mortality of these patients (ALVAREZ et al., 2012; HELCHER & BAKLEY, 2019) [9, 10]. Early diagnosis, rapid surgical intervention with radical debridement of all necrotic tissue, immediate use of antibiotic therapy, and appropriate fluid and electrolyte management, in addition to life-sustaining care for these patients, are of great importance due to the high mortality rate attributed to this condition. Imaging studies are essential to characterize the topographic limits of the infection. Clinically, the presence of significant edema in the associated region, intense pain, sensitivity, erythema and rapid progression is noted, thus making it difficult to distinguish cellulitis or erysipelas in the initial stage, but the differential diagnosis must be made to guide the treatment (COSTA, IMC. 2004; MELLO, MJR. 2020) [11, 12]. Due to the anatomical characteristics of the cervical spaces, despite the use of appropriate antibiotics, infections in the deep cervical spaces spread through the cervical fascia, cause abscesses, and involve vital structures such as the upper airways, cervical viscera, and thoracic organs (WEISS A, 2011) [13]. Thus, in addition to local manifestations with edema, obstruction of the aerodigestive tract, they also present systemic manifestations, such as: fever, prostration (LIMA Jr, MO; et al. 2020) [6].

Case Report

A 25-year-old black male patient was admitted to the emergency room of the General Hospital in the city of Malanje, Angola - Africa, where ATNA Dentistry and Teaching maintains a scientific/professional exchange project and humanitarian aid mission in the same city, in a state of coma, presenting extensive injury involving the lower region of the chin, anterior neck and thorax (Figure 1). After admission, the patient was referred to the emergency department where he was evaluated by the Oral and Maxillary and General Surgery teams. On clinical examination, the intraoral examination showed destruction of several upper and lower teeth and a generalized gingival infection, with a foul and bleeding odor. On physical examination, the teams observed extensive injuries involving the submandibular region, anterior portion of the neck and upper portion of the thorax. According to the clinical status presented, the initial diagnostic hypothesis was Necrotical Cervical Fasciitis. Immediately, the patient was referred for clinical analysis exams, at the same time that an operating room was prepared for an emergency surgical intervention. In the operating room, after general anesthesia, the process of disinfection of the extensive wound and the beginning of its debridement began, meticulously plan by plan so that all or almost all necrotic tissue could be removed. The teeth with destruction were also removed. After the end of the surgical procedure, the patient was referred to the ICU where he was kept under observation, using the following drug protocol: Vancomycin 1 g IV 12/12 hs, Clindamycin 600mg IV 6/6 hs, Meropenem 1gr IV 8/8 hs, Tramadol 100 mg IV 6/6 hs SOS, Dipyrone 1 gr 6/6 hs, Metoclopramide IV 8/8 hs, Ringer Lactate Serum 500ml 8/8 hs, Saline Serum 500ml 8/8 hs, Vit C 500 mg IV 8/8 hs, B Complex 1 amp. VS 8/8 hs, Glycemic Control 8/8 hs, Fluid Balance 6/6 hs, Vital Signs 6/6 hs, Oxygen Therapy, Dressings 12/12 hs, Daily Biochemistry. After 3 months of hospitalization, the appearance of the wound did not resemble the initial stage when he arrived in a coma at the hospital (Figure 2). After another thirty days, the patient was discharged from the hospital but returned to the outpatient clinic for follow-up. After one month of outpatient follow-up, the patient was for the last time (Figure 3) when he did not return or respond to the calls of the social service. Due to long distances, very precarious financial situation, religious beliefs, among others, it is not uncommon for the patient to abandon treatment even before being definitively discharged.

Figure 1: Appearance of the wound on the day of admission of the comatose patient at the Malanje General Hospital.

Figure 2: Appearance of the wound after three months of treatment admitted to the Malanje General Hospital.

Figure 3: Appearance of the wound after four months of treatment, the last month being at the hospital outpatient clinic, and this was the last time the patient came for control.

Discussion

In the late 18th century, researchers such as Sir Gilbert Blane, a surgeon in the British navy, and Thomas Trotter and Leonard Gillespie, both British physicians, described FN in detail; later, a Confederate army surgeon in 1871 named Joseph Jones described what is accepted as the first modern account of FN. In the 1920s, the American literature published, based on Meliny's work in China, a more detailed description of the disease. During a long period of medicine, this pathology obtained several synonymies, such as: erysipelas gangrenosum, acute cutaneous gangrene and non-clostridial crackling cellulitis (NAZIR, 2005) [14]. It was only in 1952 that the term NF appeared to define the disease and its characteristics, coined by Wilson, due to the presence of necrosis in the muscle fascia almost always present in this condition (RUDAGI & LONDHE, 2021) [15]. Other contemporary revisions of the TNFC were described by Spankus et. al, in 1984, Balcerak et. al, in 1988, and Banerjee et. al, in 1996 (MYERS et. al, 2000) [16]. Vallim et al. (2016) [8], in their study, revealed that 81% of cases started from the mandibular second or third molars. Due to their origin and anatomical characteristics, despite the use of appropriate antibiotics, deep space infections spread through the cervical fascia, cause abscesses and involve vital structures such as the upper airways, cervical viscera and thoracic organs (LIMA Jr, MO; et al. 2020) [6]. Normally, abscesses involving the secondary spaces, such as the retropharyngeal and prevertebral spaces, can communicate with the superior mediastinum, and cause mediastinitis (ALVAREZ et al., 2012; KANG-AUGER et al., 2021; PINHO et al., 2020) [9, 2, 17]. This type of manifestation is usually aggravated when it is associated with malnutrition, excessive use of alcohol, tobacco or other drugs, arterial hypertension, prolonged administration of corticosteroids, HIV infection, heart disease, liver cirrhosis, renal failure and schizophrenia (TUNG-YIU W. et. al, 2000, WEISS, A. et. al, 2011) [18]. Immunosuppression, diabetes mellitus with peripheral vascular diseases, liver diseases, immunological diseases, arteriosclerosis, and malnutrition are important risk factors that considerably increase the degree of morbidity and mortality of these patients (ALVAREZ et al., 2012; HELCHER & BAKLEY, 2019) [9, 10]. If immediate surgical treatment is not performed or if the patient is at a late stage of infection, systemic toxicity, multiple organ failure, and consequent death will invariably occur (UMEDA et al., 2003; LIMA Jr et al., 2020) [20, 6]. There is a consensus in the literature that once the diagnosis is established, treatment should be instituted immediately and consists of volume replacement, early surgical debridement, with removal of all necrotic material, including fascia; and the use of broad-spectrum antibiotics (WEISS et al. 2011; HUPP et al., 2015) [13, 21]. The first stage, considered early, involves clinical signs of inflammation, with edema, pain, redness, sensitivity in the region and loss of function. The second or intermediate stage presents the formation of blisters and vesicles, in addition to the signs of the first stage. The third or advanced stage encompasses the signs of the previous stages and involves crepitus, anesthesia, and skin necrosis (FREIRE et al., 2014; LIMA Jr MO; et al., 2020) [19, 6]. As already mentioned, the presence of significant edema in the associated region, intense pain, sensitivity, erythema and rapid progression is clinically observed, thus making it difficult to distinguish cellulitis or erysipelas in the initial stage, but the differential diagnosis must be made to guide the treatment (COSTA, IMC. 2004; MELLO, MJR. 2020) [11, 12], which is of paramount importance.

Conclusion

TNCT is an aggressive infection, with rapid dissemination through the fascial planes, with a mixed microbial flora. Clinically, the signs and symptoms of the disease are dependent on the stage of evolution. There is a consensus in the literature that, once the diagnosis is established, treatment should be instituted immediately and consists of volume replacement, early surgical debridement, with removal of all necrotic material, including fascia; and the use of broad-spectrum antibiotics. Despite being considered a manifestation of low prevalence, the mortality rate is high.

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Conflict of Interest

No Conflict of Interest.

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