

Atypical presentation of cervical necrotizing fasciitis. Case report.

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Abstract: Cervical necrotizing fasciitis (NF) is a soft tissue infection with a low incidence, characterized by rapid progression and high morbidity and mortality. The purpose of this report is to communicate the case of a patient diagnosed with cervical NF and its successful management. A 54-year-old male consulted after suffering from the condition for seven days. It was characterized by bilateral submandibular swelling, accompanied by fever, dysphagia, odynophagia, which were severely affecting the patient's general health. Physical examination revealed a painful, erythematous cervical swelling. A cervical computed tomography scan was performed, revealing a gaseous collection in the left mucosal pharyngeal space, extending to the glottis, associated with significant deep plane soft tissue emphysema on the left side of the neck and with possible involvement of the danger space; pertinent lab findings include 19,190/uL leukocytes and 219mg/L CRP. Broad-spectrum antibiotic therapy was initiated with ceftriaxone and clindamycin. Exploratory surgery, lavage and drainage of the collected material were performed. *Streptococcus anginosus* was isolated by culture. The patient recovered appropriately showing improvement in clinical as well as in inflammatory parameters, being discharged on the ninth day. He is currently receiving periodical checkups in the surgery polyclinic.

Keywords: Necrotizing Fasciitis; neck; *Streptococcus anginosus*.

INTRODUCTION.

Necrotizing Fasciitis (NF) was described during the American Civil War by military surgeon Joseph Jones, who called it "Hospital Gangrene". NF is an idiopathic gangrene characterized by rapid progression and high morbidity and mortality, affecting both men and women, involving the soft.¹ It is caused by a synergistic polymicrobial infection involving aerobic and anaerobic microorganisms.² Cervical localization is rare, and dental, peritonsillar abscesses, infections of salivary glands, cervical adenitis and idiopathic causes are its most common foci of origin.^{1,3-5}

Its clinical presentation is deceptive, often making it indistinguishable from a benign inflammatory process. On other occasions, only the presence of intense pain along with clinical findings may arouse suspicion of its occurrence. Consequently, diagnosis is often late, which is associated with a worse prognosis for the patient.^{6,7}

The treatment that has shown the best results in terms of morbimortality is early surgical debridement accompanied by the use of broad-spectrum antibiotics and life support in an intensive care unit.^{4,8}

The present article was written using the CARE check pattern for the report of clinical cases.⁹ The purpose of this report is to communicate the

case of a patient diagnosed with cervical NF and its successful management.

CASE REPORT.

The case of a 54-year-old male patient is described. The patient is of Caucasian origin and works as a security guard. Among his relevant medical history we find: sedentary lifestyle, smoker for 40 years, and associated COPD without treatment.

The patient reported having been affected by a condition for seven days, characterized by pain, fever and left submandibular swelling, associated with odynophagia and dysphagia. The subject had previously sought treatment at a Urgent

Primary Care Service, where he was diagnosed with acute tonsillitis and prescribed penicillin.

Pain, fever and left submandibular swelling persisted, later accompanied by right submandibular swelling, affecting the patient's general health. Due to these symptoms, he decided to seek care at the Hospital Emergency Department.

Physical examination upon admission revealed the following vital signs: heart rate of 87bpm, blood pressure of 173/83mmHg, axillary temperature of 38.2°C, oxygen saturation of 94%. There was bilateral, erythematous, palpation-sensitive cervical swelling and presence of crepitus (Figure 1). Positive bilateral lung murmur with inspiration and expiration wheezing was noted. Relevant

Figure 1. Evident cervical swelling on patient's admission.



Figure 2. CT scan of coronal section of head and neck.



Figure 3. CT scan of sagittal section of head and neck.



Figure 4. CT scan of cross section of head and neck.



Figure 4. Patient on discharge.



laboratory tests findings include $19190 \times 10^3/\mu\text{L}$ leukocytes and 219mg/L PCR.

A cervical CT scan was performed, showing a collection with gaseous contents in the left mucosal pharyngeal space, extending to the glottis, associated with significant emphysema of soft tissues of the deep planes of the left cervical half and with possible involvement of the danger space (Figures 2-4).

The diagnosis was complicated cervical abscess, cervical NF. Broad-spectrum intravenous antibiotic therapy was initiated with ceftriaxone 2g daily and clindamycin 600mg every 8 hours. Cervical exploration, surgical lavage and drainage were also performed.

Cervical examination revealed extensive left anterolateral cervical infectious inflammatory involvement with necrosis of the subcutaneous plane and extensive necrosis of the facial and adipose tissues of the neck. This necrosis extended to the left retropharyngeal space, forming microabscesses producing abundant pus with a putrid odor as the dissection proceeded. In addition, gas output from these planes was observed.

The technique of cervical examination corresponded to an anterior arciform cervicotomy over the swollen area. Upper and lower subplatysmal flaps were dissected, avoiding the described necrosis and draining pus diffusely. Necrosectomy was performed on the subcutaneous plane and then the necrotic tissue of the deep neck structures was resected. Under these conditions, it was not possible to

identify the marginal facial branch. Then, above the digastric bellies, the submandibular triangle was explored and the parapharyngeal space was accessed, communicating with the sub-mandibular triangle and parapharyngeal space.

Lateral dissection was extended to the anterior border of the sternocleidomastoid muscle (SCM) and the anterior jugular was explored, no involvement was observed, so it was decided not to explore the carotid sheath. Lavage of the area with abundant amount of saline solution was performed and two latex drains were placed at the deep spaces of the neck, projecting outwards through the same incision, and which were fixed loosely with Prolenne 4-0.

Profound hemostasis and careful examination were performed. The cutaneous plane was treated with Prolenne 3-0 and individual Donati sutures were used.

The patient's condition worsened requiring further antibiotics and special care in the intensive care unit. A second surgical lavage was performed at 48 hours after the first one, which did not show any progression of necrosis. After this, the patient's condition improved and inflammatory parameters decreased.

The laboratory culture was positive for *Streptococcus anginosus*, susceptible to the administered antibiotics. After nine days in the hospital, the patient was discharged in a good general state (Figure 5). Currently the patient is in good general health and receiving periodical checkups in the surgery polyclinic.

DISCUSSION.

Within the limitations observed in the management of this case, it is important to point out that crepitus and the observation of cutaneous gas in the CT, which are considered late signs, were necessary to reach the diagnosis.³ As mentioned, clinical diagnosis of cervical NF is nonspecific initially, so a high index of suspicion is required for its early diagnosis. However, the immediate administration of broad-spectrum antibiotics and the aggressive debridement performed on this patient, along with the multidisciplinary management in intensive care units, resulted in a successful outcome.

However, there are cases in which management was performed with conservative surgical treatment (incision and drainage) associated with antibiotic treatment, and which have also proved effective.¹⁰

The need to perform an early diagnosis and to differentiate cervical NF from less severe cervical infections has led some researchers to develop scales for the early detection of this pathology, with good results in terms of sensitivity and specificity.¹¹

Cervical NF is less prevalent than other locations, such as the perineal area and extremities. In this case, in addition to the infrequent location, the initial focus is not common, since it could also be due to acute tonsillitis.¹² However, any cervical infection can potentially progress to NF. It is also important to note that in a relatively significant percentage of cases an initial focus is not recognized.

Diabetes mellitus, alcoholism, immunosuppression, smoking, sedentary lifestyle, etc., are among the predisposing factors for this disease. Although this patient presented some of these factors, the existing literature indicates that in approximately 50% of the cases NF can occur in young and healthy patients with no associated conditions favoring it.⁴

The most feared complication of cervical NF is the progression of the infection despite adequate therapy, which

often leads to the need for additional surgical lavages. In our medical center, a “second look” is performed within 48 hours of the initial intervention in order to detect a possible local complication.

The treatment that has shown the best results in terms of morbimortality associated with the disease is the early surgical lavage with aggressive debridement, accompanied by broad-spectrum antibiotic therapy subsequently adjusted by the results of antibiotic susceptibility assays. New treatments for this pathology have been described, such as the use of hyperbaric oxygen, which would reduce morbidity and mortality by inhibiting bacterial development, as it would play a role in limiting the extent of necrosis. However, it still remains controversial.¹³

CONCLUSION.

The case of a patient diagnosed with cervical NF and its successful management were reported, emphasizing the importance of clinical suspicion for early diagnosis of this pathology.

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