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A Rare Cause of Facial Cellulitis

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Abstract

Facial cellulite are infections of the cellulo-adipose tissues of the human face. Head and neck cellulitis is today one of the most serious ENT emergencies, which is very life-threatening and requires immediate multidisciplinary care. Diabetes mellitus is one of the most common predisposing factors. They are serious conditions because of the rapidity with which they tend to spread. They perform an extensive necrotizing condition, developing from a banal, pharyngeal or dental infection, and spreading along the aponeurotic partitions of the face and neck. The etiologies are diverse and come mainly from dental infections. Nasosinus infections can be the cause especially on immunocompromised patients. The diagnosis is mainly clinical. The treatment is medico-surgical and must start as soon as the diagnosis is made to avoid complications. We report a case of an abscess of the nasal septum responsible for facial cellulitis in 45-year-old diabetic patient. Her diabetes was irregularly followed. The septal abscess spread over a few days to the tissues of the face. He was received in a picture of impaired general condition with significant facial oedema. He received rapid and appropriate medical and surgical car. He progressed well under treatment after 15 days.

Keywords

Facial Cellulite, Abscess, Nasal Septum, Diabetes

1. Introduction

Cellulitis is simply defined as an acute infection of the skin involving the dermis and subcutaneous tissues [1].

Cellulitis is a common bacterial skin infection. Cellulitis typically presents as a poorly demarcated, warm, erythematous area with associated edema and ten-

derness to palpation. It is an acute bacterial infection causing inflammation of the deep dermis and surrounding subcutaneous tissue. The infection is without an abscess or purulent discharge. Beta-hemolytic streptococci typically cause cellulitis, generally group A streptococcus (*Streptococcus pyogenes*), followed by methicillin-sensitive *Staphylococcus aureus*. Patients who are immunocompromised, colonized with methicillin-resistant *Staphylococcus aureus*, bitten by animals, or have comorbidities such as diabetes mellitus may become infected with other bacteria [2].

The classic presentation of rubor (redness), dolor (pain), tumor (swelling), calor (heat) are the hallmarks of cellulitis. The spectrum of severity ranges from localised erythema in a systemically well patient to the rapidly spreading erythema and fulminant sepsis seen with necrotising fasciitis. Pain out of proportion to the clinical signs, in particular, if accompanied by a history of rapid progression should prompt consideration of a necrotising fasciitis. Timing and evolution of the skin findings may differentiate cellulitis from some of the common mimics with more chronic clinical course [1].

Careful clinical examination may reveal a portal of entries such as ulcers, trauma, eczema or cutaneous mycosis. Skin breaks, bullae or areas of necrotic tissue may be present in severe cellulitis [1].

Computed tomography is heavily used in the assessment of the spreading and etiological research. The prognosis can be grim related to the functional sequelae as well as life-threatening complications [3].

Patients with purulent skin and soft tissue infections such as abscesses, furuncles or carbuncles should have those collections incised and drained. Samples should be sent for bacterial culture and consideration given to systemic antibiotics in patients with systemic signs of infection [1].

We report the case of facial cellulitis secondary to an abscess of the nasal septum in a patient with diabetes who was well taken care of in the ENT department of the regional hospital of Thies in Senegal.

2. Clinical Case

On April 17th 2020, a 45-year-old man walked into the ENT Department of Thies Regional Hospital. He suffered from a diffuse edema of the face associated with a deterioration of his general health. The symptomatology after three weeks of evolution in a feverish context was made of headaches, nasal obstruction associated with pain. The patient suffered from diabetes and was not properly monitored.

The patient had no rhinologic history and no nasal trauma. Upon examination, the patient had a 38.5˚ fever and capillary glycemia at 3.44 g with no ketone bodies. He had a bilateral orbital edema causing a complete occlusion of eyeballs, presence of pustules at the left paranasal side and a swelling of the nasal pyramid that was inflammatory and painful on palpation (**Figure 1**).

Anterior rhinoscopy showed an anterior, bilateral and fluctuating swelling of the septal mucosa obstructing the two nasal cavities. The septal mucosa was in-

flamed, reddish and spontaneous and purulent discharge increasing with pressure (Figure 2, Figure 3).

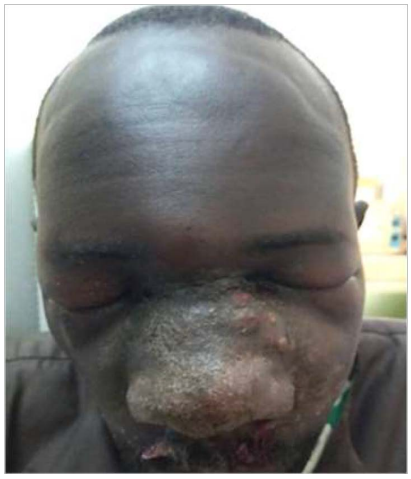

Figure 1. Clinical aspect of the patient on admission.

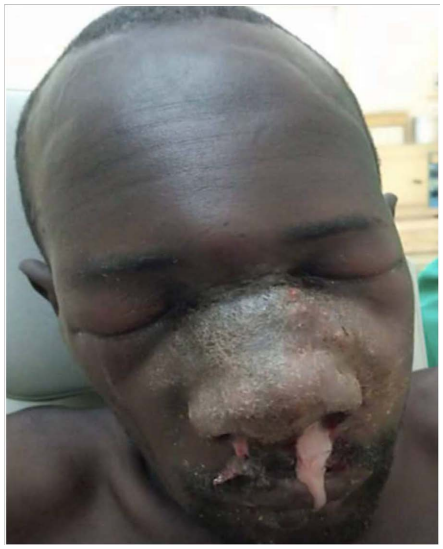

Figure 2. Issue of pus after pressure of the nasale septum.

Figure 3. Anterior rhiniscopy.

A bacteriological sample was taken and a surgical drainage of the abscess was performed in emergency by two inter-septo-collumellar incisions on both sides of the nasal septum allowing evacuation of 60 cc of frank pus. Then a washing of the nasal cavities was performed, followed by a wicking (**Figure 4**).

Then the patient was put on parenteral amoxicillin-clavulanic acid associated with local care (**Figure 5**). An opinion on endocrinology was requested and the patient was put under insulin therapy with regular monitoring of the blood sugar level.

The swab wade it possible to isolate *Staphylococcus aureus* sensitive to ciproflaxin.

Five days after the beginning of the treatment, on April 22nd 2020, computed tomography of the facial bone was performed. It was made late because of a

Figure 4. Chairside abscess drainage.

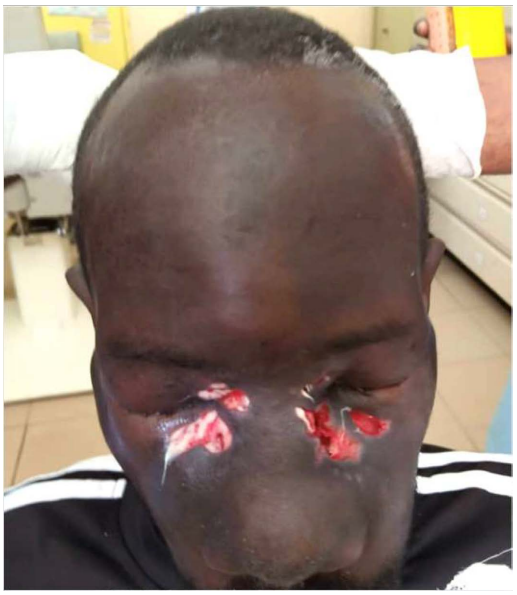

Figure 5. After drainage and local care.

financial problem. It showed a septal thickening with no other lesion (Figure 6, Figure 7).

The patient had been put on insulin therapy until the glycemia stabilized. The antibiotic therapy adapted to the antibiogram was administered by injection until the regression of the symptoms. Local care was performed twice a day until sterilization of the infectious site.

The evolution was favourable after 15 days with a regression of the edema, improvement of the skin health as well as a stabilization of his diabetes (Figure 8). There was also a disappearance of the inflammatory biological markers.

The patient was discharged after 3 weeks and was regularly monitored in the service until complete recovery.

3. Discussion

Nasal septal abscess is defined by the presence of pus between the septal cartilage and its perichondrium and/or the septal bone and its periosteum. Nasal septum

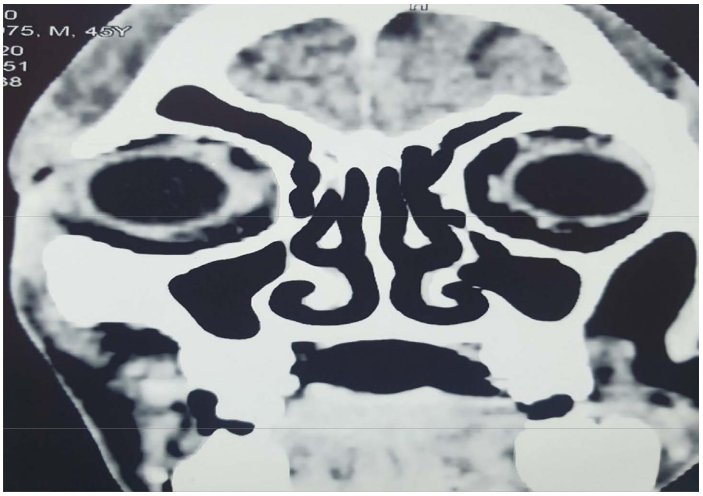

Figure 6. Sinus emptiness.

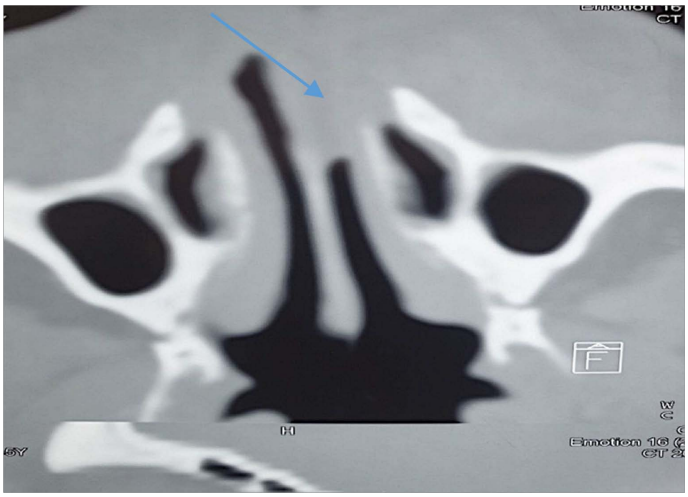

Figure 7. Left anterior septal hypodensity.

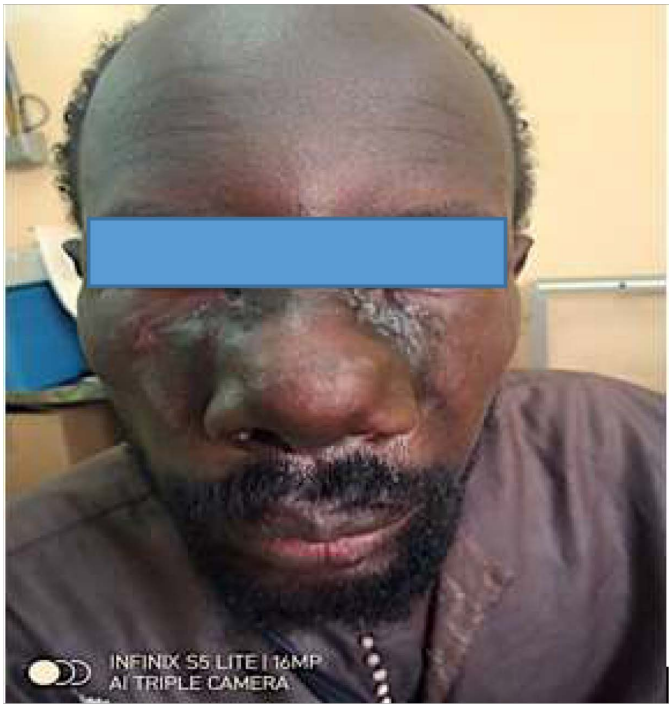

Figure 8. 15 days after abscess drainage.

abscess is a rare infection because few cases have been documented in medical literature. It is a serious condition because of the complications it can cause [4] [5] [6].

The abscess is usually the result of a superinfection of a hematoma of the nasal septum that was neglected or poorly treated. More rarely, the abscess can spread towards the septum either from a skin lesion such as a nose boil or from sinusitis or also from a close dental focus [4] [5] [6]. The most probable etiology with our patient was the spreading of a boil to the nasal septum favoured by his diabetes [6].

The skin serves as a protective barrier preventing normal skin flora and other microbial pathogens from reaching the subcutaneous tissue and lymphatic system. When a break in the skin occurs, it allows for normal skin flora and other bacteria to enter into the dermis and subcutaneous tissue. The introduction of these bacteria below the skin surface can lead to an acute superficial infection affecting the deep dermis and subcutaneous tissue, causing cellulitis. Cellulitis most commonly results from infection with group A beta-hemolytic streptococcus (*Streptococcus pyogenes*) [2].

Risk factors for cellulitis include any culprit that could cause a breakdown in the skin barrier such as skin injuries, surgical incisions, intravenous site punctures, fissures between toes, insect bites, animal bites, and other skin infections. Patients with comorbidities such as diabetes mellitus, venous insufficiency, peripheral arterial disease, and lymphedema are at higher risk of developing cellulitis [2].

The clinical diagnosis of an abscess in the nasal septum in generally is easy to

make. Anterior rhinoscopy coupled with nasal endoscopy, shows a fluctuating and inflammatory swelling of the septal mucosa reddish, purplish or sometimes greyish. The swelling is sometimes bilateral and takes place in the anterior side of the septum [2] [5].

The presence of a fistula with discharge of pus (the case of our patient) is rarely found.

The puncture in full fluctuation, by bringing discharge of pus, confirms the diagnosis and enables bacteriological evidence.

Staphylococcus aureus is the most commonly isolated germ [6] [7], as was the case with our patient. Sometimes the infection is polymicrobial as is the case with immunocompromised patients [4]. Complimentary examinations are not necessary for the positive diagnosis but they can help in the etiological diagnosis.

Computed tomography helps in the assessment of the extent of the abscess as well as the structure of the cartilage and the bone. It also helps in the diagnosis of a related sinusitis and possible vascular or neurological complications [4] [5].

Urgent and proper medical and surgical treatment is required [6]: The treatment consists of three parts: treating the abscess, treating the etiology and treating the complications. This threefold treatment stops the evolution towards cartilage destruction which can carry catastrophic morphologic and functional repercussions or even avoid the appearance of severe locoregional or general infectious complications.

Hospitalization with the induction of systemic antibiotics may be necessary for patients who: present with systemic signs of infection, have failed outpatient treatment, are immunocompromised, exhibit rapidly progressing erythema like our patient [2].

If the clinician promptly identifies cellulitis and initiates treatment with the correct antibiotic, patients can expect to notice an improvement in signs and symptoms within 48 hours. Annual recurrence of cellulitis occurs in about 8 to 20% of patients, with overall reoccurrence rates reaching as high as 49%. Recurrence is preventable with prompt treatment of cuts or abrasions, proper hand hygiene, as well as effectively treating any underlying comorbidities. The treatment of the cause is paramount. Overall, cellulitis has a good prognosis [1] [2].

In our patient, the management was rapid and the evolution was favorable without recurrence.

4. Conclusion

The abscess of the nasal septum is a rare but severe condition that can carry very severe functional as well as aesthetic repercussions and even sometimes life-threatening prognosis. The diagnosis is mainly clinical. The treatment is medico-surgical and must start as soon as the diagnosis is made to avoid complications.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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