

CASE REPORT

Facial Erysipelas: A Case Report

Lamiaie Hallab ^a  ; Bouchra Taleb ^b 

^a Doctor Resident Department of Oral Surgery, Faculty of Dental Medicine, Mohammed V University in Rabat, Morocco

^b Professor of higher education, Department of Oral Surgery, Faculty of Dental Medicine, Mohammed V University in Rabat, Morocco

ABSTRACT

Erysipelas is a superficial cutaneous process that is usually restricted to the dermis, but with prominent lymphatic involvement commonly caused by streptococci. We present a patient who was admitted for a swelling and erythema of his left cheek. We diagnosed facial erysipelas, the curative treatment was based on the prescription of an effective antibiotic therapy against streptococci and bacteria producing β -lactamase (staphylococci). Removal of the remaining teeth was scheduled during medical treatment. At a 4-month follow-up after dental removal, there has been no recurrence of erysipelas. Through a clinical case of facial erysipelas, this work allows to illustrate the specificities of this pathology.

KEYWORDS: Facial Erythema, Erysipelas, B-Hemolytic Streptococci, Penicillin.

Correspondence: Dr Lamiae Hallab, Address : Faculty of Dental Medicine, BP 6212 Madinat Al Irfane, Rabat, Morocco.

Email: lamiae.hallab@um5s.net.ma

Copyright © 2020 Hallab L & Taleb B. This is an open access article distributed under the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Erysipelas is a common skin infection causing significant morbidity in patient which often have underlying conditions (1,2). It is characterized by an area of erythema that is well- demarcated, raised, and often affects the lower extremities (85%), upper limbs (15-40%) and faces (2.5%–9%) (1,3,6,9).

This disorder is more common in infants, young children, and older adults and is almost always caused by β -hemolytic streptococci (6). It predominantly concerned adults after 40 years with a sex ratio of around 1:1 (8). Few studies have been done on the incidence of this infection, and it is estimated at 9 cases for 100,000 inhabitants per year (7). Erysipelas has a rapid and favorable response to antibiotics especially penicillin (10). Local complications with recurrence are more common than systemic complications (4). The objective of the present case report is to demonstrate the clinical specificities and treatment of this pathology.

CLINICAL OBSERVATION

A 54-year old man was referred to the Department of Oral Surgery with the complaint of swelling and erythema of his left cheek. The patient's personal history revealed that the pain had become progressively intense and involve the right eyelid. He had subsequent intake many drugs including: antibiotic "amoxicillin monotherapy" and anti-inflammatory without any improvement. Extraoral examination revealed the presence of a circumscribed erythema, edematous with crust and

superficial ulceration on the right hemiface extending even to the palpebral level.

The affected area is painful and warm on palpation. Bullous lesions were also noted (Fig 1(a,b)). In the intraoral examination, we noted the absence of all teeth in the maxilla, the persistence of the 4 lower incisors abraded and decayed with class II recessions and gingival inflammation (Fig 2(a,b)). Orthopantomogram, showed localized alveolar bone loss in the 4 lower incisors. No dental inclusion was noted (Fig 3).

According to these clinical and radiological features, general health of patient different diagnosis have been ruled out such as: Post-radiation dermatitis, cellulitis, thrombophlebitis and acute eczema. Therefore, the positive diagnosis of facial erysipelas was made.

Medical treatment with oral antibiotic based on Penicillin M was initiated for 10 days with a dosage of 2 tablets per day. The result was interesting with symptoms reduction after 1 week of treatment (Fig 4). During prescription, the 4 lower incisors were also removed in order to eliminate any infectious foci that is a potential source of recurrence (Fig 5 (a,b)).

The patient then returned for further follow-up four months later, extraoral examination showed complete recovery with no evidence of recurrence (Fig 6 (a,b)). Intraoral examination revealed good healing at the extraction sites (Fig 7).



Fig 1 (a, b) : Front and profile extraoral view



Fig 2 (a, b): Intraoral view of maxilla and mandible



Fig 3 : Orthopantomogram showing localized alveolar bone loss in the 4 lower incisors.



Fig 4 : Extraoral view after 1 week of medical treatment

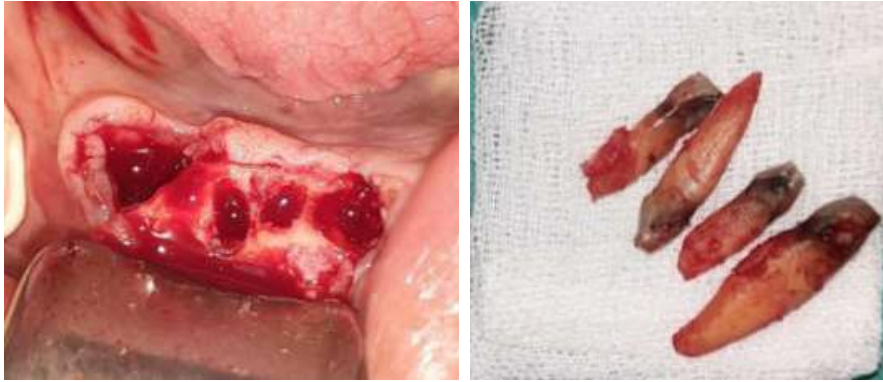


Fig 5 (a,b) : Intraoral view of the tooth extraction site and the 4 lower incisors extracted



Fig 6 (a,b) : Front and profile extraoral view after 4 month following-up



Fig 7 : Intraoral view of mandible after 4 month following-up.

DISCUSSION

Erysipelas can be defined as acute bacterial dermal hypodermatitis, which can be streptococcal or non-necrotizing staphylococcus affecting the face, lower limbs in a unilateral way but can affect any part of the body (6,7). In international literature, the term "erysipelas" is often considered a superficial form of "cellulitis" (7,12). Different factors predisposed to this infection such as chronic wounds, insect bites, interdigital mycosis, surgical incisions and venous insufficiency (4-6). Systemic conditions can also contribute to the development of this infection such as poorly controlled

diabetes, and liver disease, immunosuppression or any pathologies leading to edema of the lower limbs like high blood pressure that our patient mentioned (4-7). A history of erysipelas also predisposes to a new episode (6,7). In patients with facial erysipelas, there is frequently a history of preceding streptococcal sore throat, although the exact mode of spread to the skin is unknown (5). According to Michael and al in 2020 (4), they have evoked that a recent infection in the nasopharynx was the cause of the appearance of facial erysipelas. Compared to a dental origin, the study by Pigatto et al in 2011 (11) through a clinical case they showed the appearance of this infection

in a patient with dental amalgam fillings and in our case with the presence of infectious dental foci (decayed teeth with periodontal disease)

The clinical picture is characterized by an inflammatory reaction of the upper dermis with a sharp demarcation of the erythema. Occasionally, a primary lesion such as a wound or skin crack is present (1). This cutaneous lesion begins as a localized area of erythema and swelling and then spreads with advancing red margins, which are raised and well demarcated from adjacent normal tissue (4,12). There is marked oedema, often with bleb formation, and in facial erysipelas, the eyes are frequently swollen like our patient who presented a palpebral extension (5). Patients often experience systemic symptoms, such as malaise, fever, and chills 48 hours before the onset of the skin lesion (4).

It is rare to identify the erysipelas germ. Blood cultures only being positive in 5% of cases (13). The aspiration test around the lesion can identify this infection in 5-40% of cases, but this invasive examination is little used in clinical practice. Recently, according to the 2014 Infectious Diseases Society of America (IDSA) guidelines for the diagnosis and management of skin and soft tissue infections (15) : cultures of blood or cutaneous aspirates, biopsies are not routinely recommended for erysipelas. The majority of germ linked to erysipelas (85%) belong to group A β -hemolytic streptococcus, followed by other groups G, B or C. *Staphylococcus aureus*, including strains resistant to methicillin, or gram-negative aerobic bacilli, can be found mainly in the immunocompromised or in the case of bacteremia (6). Moreover, a recent American studies have identified an increase in methicillin-resistant *Staphylococcus aureus* (MRSA) (around 50%) (14). Histopathology of this infection revealed a significant vascular dilatation and moderate perivascular infiltrate in the papillary dermis consisting of eosinophils, neutrophils, and mononuclear cells (20). Furthermore, there was extravasation of erythrocytes around the blood vessels of the superficial vascular plexus and dilation of the lymphatic capillaries (20). In the subcutis there is a predominantly lobular panniculitis without evidence of vasculitis (20).

The diagnosis is above all clinical. Additional examinations are not indicated in outpatient practice, therefore bacteriology is usually not helpful because of low sensitivity or delayed positivity (10). Laboratory examination if performed usually showed a significant inflammatory syndrome with leukocytosis and elevated ESR and C-reactive protein (6,4). The differential diagnosis of facial erysipelas is large. Early on, the lesions of facial herpes zoster or giant urticaria may be confused with erysipelas (6). We can also identify :

-Facial radiodermatitis : which occurs during a history of irradiation in the orofacial sphere and characterized by progressive skin erythema, edema of the skin and eventually moist desquamation (21).

-Cervico-facial cellulitis : it's a polymicrobial infection that affect the aponeurotic spaces on the face and neck, which is usually related to an infectious focus (22).

-Acute eczema : represented as inflammatory itchy skin disease with a chronic relapsing- remitting course, which has an allergic origin and manifested by red areas surmounted by vesicles (23).

-Thrombophlebitis facial : defined as an infection of a facial venous system by septic thrombi. It's characterized by significant edema in the internal angle of the eye, especially the upper eyelid, as well as a deterioration in general health (24).

Treatment of erysipelas is specific, antibiotics against streptococci should be initiated when erysipelas is suspected (4). The first choice will be a synthetic penicillin active against streptococci and β -lactamase-producing bacteria (*staphylococcus*) such as clavulanic acid amoxicillin or flucloxacillin like what we prescribed for our patient in our clinical case (6). Coverage against methicillin-resistant *Staphylococcus aureus* (MRSA) is specific, the 2014 Infectious Diseases Society of America (IDSA) guidelines for the diagnosis and management of skin and soft tissue infections recommend Clindamycin or linezolid in outpatient practice and daptomycin or possibly vancomycin in cases of hospitalization (6,14). If the patient has an infection following a bite from an animal or human, anaerobic coverage is necessary, amoxicillin-clavulanic acid is recommended. In diabetes, the infection is most often polymicrobial, broad-spectrum antibiotic therapy should be undertaken (amoxicillin- clavulanic acid, or even imipenem-cilastatin) (6). Duration of antibiotic therapy is varied to 5-7 days, but the period may be extended to 10 days if the infection does not improve (4,6). Hospitalization is recommended for necrotizing infection, patients with poor adherence to medications and follow up, and for those whose treatment is failing (4). Corticosteroids are among the adjuvant treatment options that have been tested. Therefore according to a study of Dall and al, they suggested that the use of ibuprofen (400 mg every 6 hours for 5 days) in conjunction with antibiotic therapy can also hasten the recovery time for patients with erysipelas and other skin infections, without negative side effects (16). Oral analgesics and antipyretics include paracetamol, ibuprofen paracetamol-codeine combination, aspirin can be prescribed depending on the severity of the pain (17). The prognosis of erysipelas is good and can be managed in the outpatient setting. It responds well to oral antibiotics. However, extra caution should be taken in the immunocompromised and those with poor adherence to medication (4).

The most feared systemic complication is extension of the disease in the form of gangrene or fasciitis with a septic syndrome major. Local complications are more frequent occurring of patients hospitalized for erysipelas and they are mainly abscess formation, necrosis, bubbles and hemorrhagic purpura (18). For long-term complication, recurrence was the most predominant (6). According to a study published in 2017, based on the prevention of recurrent episodes of cellulitis and erysipelas. The authors concluded that patients who were on preventative treatment with antibiotics, particularly penicillin, had a decreased risk of future episodes by 69% (19). But this has been controversial by several studies which evoked the risk of developing resistance to the antibiotic due to long-term use (25).

CONCLUSION

Erysipelas is a common skin infection which diagnosis is mainly clinical. This infection responds favorably to specific antibiotic therapy. The most frequent

complication is recurrence, elimination of infectious foci as well as long-term follow-up is necessary in order to control this risk. The prognosis is generally good if the patients are cooperative and attentive towards the treatment prescribed by the doctor

ACKNOWLEDGMENTS

None.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the [Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of](#)

[the International Committee of Medical Journal Editors](#).

Indeed, both authors have actively participated in the redaction, the revision of the manuscript, and provided approval for this final revised version.

COMPETING INTERESTS

The authors declare no competing interests with this case.

FUNDING SOURCES

None.

PATIENTS CONSENT

Written informed consents were obtained from the patient for the publication of this case report.

REFERENCES

- [1] Bläckberg A, Trell K, Rasmussen M. Erysipelas, a large retrospective study of aetiology and clinical presentation. *BMC Infect Dis.* 2015 ;15:402–7.6.
- [2] Morris AD. Cellulitis and erysipelas. *BMJ Clin Evid.*2008;1708–15.
- [3] Bonnetblanc JM, Bédane C. Erysipelas, recognition and management. *Am J Clin Dermatol.* 2003;4:157–63.5
- [4] Michael Y, Shaukat NM. Erysipelas StatPearls Publishing; Jan 2020 :1-9
- [5] Stevens DL, Bryant AE. Impetigo, Erysipelas and Cellulitis. *Streptococcus pyogenes*
- [6] : Basic Biology to Clinical Manifestations University of Oklahoma Health Sciences Center Feb 10 2016 :1-27
- [7] Blum C-L, Menzinger S, Genné D Erysipèle : manifestations cliniques et prise en charge *Rev Med Suisse* 2013 ; 9 : 1812-5
- [8] Zürcher S, Toutous L, Trellu Erysipèle et dermohypodermite récidivants : prise en charge *Rev Med Suisse* 2015 ; 11 : 759-62
- [9] Lipsky BA, Moran GJ, Napolitano LM, Vo L, Nicholson S, Kin M A prospective, multicenter, observational study of complicated skin and soft tissue infections in hospitalized patients : Clinical characteristics, medical treatment, and outcomes. *BMC Infect Dis* 2012 ;12(227) :1-11
- [10] Bonnetblanc JM, Bédane C Erysipelas Recognition and Management *American Journal of Clinical Dermatology* 2003 ;4 :157–163
- [11] Caetano M , Amorim I Erysipela *Acta Med Port* 2005; 18: 385-394
- [12] Pigatto P.D, Brambilla L, Guzzi G Erysipelas-like mercury exanthem related to dental metal allergy *Journal of Plastic Dermatology* 2011;7(3):275-7
- [13] Titou H, Ebongo C, Bouati E, Boui M Risk factors associated with local complications of erysipelas: a retrospective study of 152 cases *The Pan African Medical Journal.* 2017 ; 26(66) :1-7
- [14] Stevens DL, Bisno AL, Chambers HF, Everett E D, Dellinger P, Goldstein E JC et al. Practice guidelines for the diagnosis and management of skin and soft-tissue infections. *Clin Infect Dis* 2005 ; 41:1373- 406.
- [15] Moran GJ, Krishnadasan A, Gorwitz RJ, Fosheim E G, McDougal K L, Carey B R et al. Methicillin- resistant S. aureus infections among patients in the emergency department. *N Engl J Med* 2006 ; 355: 666-74
- [16] Stevens D, Bisno A, Chambers HF, Dellinger E P, Goldstein E JC, Gorbach L S , Hirschmann VJ et al Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by the Infectious Diseases Society of America *CID* 15 July 2014 ;59 :10-52.
- [17] Dall L, Peterson S, Simmons T, Dall A. Rapid resolution of cellulitis in patients managed with combination antibiotic and anti-inflammatory therapy. *Cutis*
- [18] 2005 ;75:177–80.
- [19] Celestin R, Brown J, Kihiczak G, and Schwartz R.A Erysipelas: a common potentially dangerous infection *Acta Dermatoven APA* 2007 ;16(3) :123-127
- [20] Krasagakis K, Samonis G, Valachis A, Maniatakis P, Evangelou G, Tosca A. Local complications of erysipelas: a study of associated risk factors. *Clin Exp Dermatol.* 2011 ;36(4):351-354
- [21] Dalal A, Eskin-Schwartz M, Mimouni D, Ray S, Days W, Hodak E, Leibovici L, Paul
- [22] M. Interventions for the prevention of recurrent erysipelas and cellulitis. *Cochrane Database Syst Rev.* Jun 2017 ;20(6) :1-100
- [23] Radakovic S, Holzer G, and Tanew A Erysipelas-like erythema as a cutaneous sign of familial Mediterranean fever: A case report and review of the histopathologic findings *J am acad dermatol* 2012 ;68(2) :61-63
- [24] Singh M, Alavi A, Wong R, Akita S Radiodermatitis: A Review of Our Current Understanding *Am J Clin Dermatol* (2016) ;17:277–292
- [25] Davido N, Barère F, Yasukawa K Cellulites faciales odontogènes de l'adulte *Prise en charge médico-chirurgicale l'information dentaire* 25 mai 2011 ; (25) :75-82
- [26] J Brown S Atopic Eczema *Clinical Medicine* 2016 ;16(1): 66–9
- [27] Ouattara B, Bissa H., Djieukam M. C, Fokui Jules V and al Les thrombophlebites en stomatologie et chirurgie maxillo-faciale *Rev. Iv. Odonto-Stomatol.* 2010 ;12(1) :12- 15
- [28] Chiat Oh C , Chung Hung Ko H, Yueh Lee H, Safdar N Antibiotic prophylaxis for preventing recurrent cellulitis: A systematic review and meta-analysis *Journal of Infection* 2014 ; 69