

Research Article

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Erysipelas During Pregnancy

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ABSTRACT

Pregnancy is a physiologic condition with a significant alteration of the immune functions and during which extremities erysipelas are rarely reported. We report in the light of a literature review the results of 6 patients treated for leg erysipelas between 2012 and 2016.

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Introduction

Pregnancy is a physiologic condition with a significant alteration of the immune functions and higher risk of infection [1]. Erysipelas during pregnancy is rarely reported but severe forms occurred frequently [2,3,4]. About that, Cervicofacial location is the most common site reported [2]. The anatomy of the oral cavity plays a significant role in the spread of cervicofacial infection whose 75% is usually of odontogenic origin [5,6,7]. In this particular context, prompt management should be instituted to avoid fetal and maternal serious consequences and complications. Through this article, we attempted to raise in a series of six women the clinical and evolutionary characteristics of extremities erysipelas rarely reported in these locations during pregnancy.

Materials and Methods

This cohort descriptive study was carried out on 6 pregnant women with leg erysipelas to the dermatology department of Hassan II University Hospital (Fez, Morocco) within a four-year period from January 2013 to December 2016. Information was collected on the basis of patient case files, emergency registers as well as

inpatient admission records. The study protocol was approved by our Institutional Ethics Committee. All patients benefited from obstetric examination to determine the pregnancy and fetal status.

Result

The age of our patients ranged from 32 to 38 years with a mean age of 36. The term of pregnancy was respectively 32, 36, 33, 31, 28 and 8 weeks of amenorrhea (Table 1). All patients don't have a secondary comorbid medical condition. The six patients had leg erysipelas without a previous episode. Of the six patients, four were obese. The entry point of the infection was a foot intertrigo in four cases, wound in one patient and excoriation secondary to pruritus in the last case. The clinical aspect was a well-defined, tender and bright red plaque, we also noted blisters in three cases, purpura and erosions in the one other patient (Figures 1 and 2). The Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score was 4 on average. The venous Doppler ultrasound did not show any abnormalities in all cases. In the present study, All the patients were reviewed by the obstetrics and gynecology team at the admission. The average time for consultation and hospitalization duration was 3 and 10 days respectively.

Table 1: Patient's summary

Patients	Age	Pregnancy term (Weeks of amenorrhea)	Number of pregnancies	Previous treatment	Management	Outcomes
1	32	32	4	traditional	Medical	Favorable
2	38	36	3	NSAIDs	Medico-surgical	Favorable
3	36	31	4	Unspecified	Medical	Favorable
4	38	33	2	NSAIDs	Medical	Favorable
5	34	8	1	Antibiotic	Medico-surgical	Favorable
6	38	28	3	Antibiotic	Medical	Favorable

NSAIDs: Non-steroidal anti-inflammatory drugs



Figure 1: well-defined, tender, red plaque with blisters.



Figure 2: Red edema with Hemorrhagic bullae and erosions

Treatment used intravenous amoxicillin with clavulanic acid. The evolution was favorable in 4 cases, while two patients presented an abscess requiring the modification of antibiotic therapy to ceftriaxone and metronidazole, and they got surgical drainage. We also treated points of entry to avoid a recurrence. Fortunately, all pregnancies were completed without complication.

Discussion

Pregnancy is a physiologic condition with a significant alteration of the immune functions [8]. In fact, Pregnant women are at a much higher risk of infection, compared to nonpregnant women because of a decrease of neutrophil chemotaxis, cell-mediated immunity and natural killer cell activity among them [5-11].

Extremities erysipelas is rarely reported during pregnancy, it is more usually described at cervico-facial location with a prevalence rate of 13.7% noted by Omeje KU et al. The authors consider that populations from poor and rural areas are more exposed to infection as well as its severe complications in the background of pregnancy [2].

In addition, some factors may play a major role in developing this infection including diabetes, obesity which was noted in four of our patients and important physiologic edema that is often observed at the last months of pregnancy due to hormone-induced sodium retention and inferior vena cava compression by an enlarged uterus [12,13]. In pregnancy, there is usually an upsurge in the levels of estrogen and progesterone. These hormones are largely responsible for marked skin changes and damages that promote infection hence the interest to use moisturizers [14,15].

Treatment includes first antibiotics that should be safe for use during pregnancy and effective against the bacteria causing erysipelas. About that, penicillin is the drug of choice [16,17,18]. tetracycline and aminoglycosides are often contraindicated in pregnancy due to

their effect on teeth discoloration, developing bone and ototoxicity. As for metronidazole, it is relatively contraindicated due to its potential teratogenic effect [19]. However, it is administered when the benefit is deemed to outweigh the risk [19].

Uncontrolled comorbid medical conditions have been associated with poor prognosis in pregnant women. Osunde et al noted overwhelming sepsis in a pregnant patient with uncontrolled diabetes mellitus [17].

Poor initial management plays an important role in the occurrence of local erysipelas complications that occurred in 31% to 52% of patients [20,21,22]. In a total of 152 patients, the most frequent local complications were bullae (27%), followed by hemorrhagic lesions (20%), abscesses (11%) and necrosis (5%) [21]. In the case of Uncomplicated abscesses, the attitude consists of an incision and drainage. In this context, two recent trials showed that cure rate increases from 69-74% to 81-83% with adjunctive antibiotics [23,24].

From a bacteriological point of view, a study carried out by Thiebaut et al in 17 patients showed the frequency of aerobic germs in this type of infection. In our study, bacteriological examination isolated aerobic germs in 2 cases [25].

Lymphoedema and obesity are the most important risk factor for recurring erysipelas [26]. About that, all risk factors should be treated vigorously. When infections recur despite adequately treating risk factors, prophylactic antibiotics should be started [27].

Keefer and Spink reported a general mortality from erysipelas of $16.4 \pm 3.6\%$ prior to the use of antibiotics [28]. This mortality decreased with the advent of the chemotherapy to 2.4% according to Hoyne, Wolf and Prim [29].

According to Williams any septic condition has a more serious prognosis in pregnancy than at other times. Adair and Stieglitz, in their stated in their textbook "Obstetric Medicine," that the prognosis of erysipelas rarely observed in pregnancy is not necessarily unfavorable, especially if the disease is limited. All of the patients in the present series had an improvement in their clinical status without systemic complications. The 2 patients who presented an abscess had benefited from surgical drainage with favorable evolution. Fortunately, all pregnancies were completed at term [30,31].

Conclusion

In pregnancy period, attention should be given to measures that prevent erysipelas by especially treating lymphoedema as well as all point of entry. Multidisciplinary and prompt management of erysipelas during pregnancy is important to ensure outcomes. Until recovery, close controls are necessary for the pregnant patient and the fetus to avoid complication particularly sepsis, preterm labor and premature birth.

References

1. Garite TJ, Gabbe SG, Niebyl JR, Simpson JL, Eds (2002) Intrapartum fetal Evaluation. In: Obstetrics—Normal and Problem Pregnancies, 4th Edition, Churchill Livingstone, New York 395-429.
2. Omeje KU, Omeje IJ, Agbara R (2020) Severe Cervicofacial Cellulitis in Pregnancy- A Review of 18 Cases. Iran J Otorhinolaryngol 32: 93-100.
3. Miloundja J, Assini Eyogho SF, Mandji Lawson JM (2011) Cellulites cervico-faciales diffuses: 32 cas vus à Libreville.

- Santé 21: 153-157.
4. Razafindrabe JAB, Randriamanantenasoas VH, Andrianasolo MF, .B. Radaviarison , V.O. Rasoarimasy, et al. (2007) Epidemiological and clinical aspects of dental cellulitis in Antananarivo. *J Med Sci* 7: 1108–1111.
5. Gordon MC (2002) Maternal physiology in pregnancy in: Gabbe SG, Niebyl JR, Simpson J (eds). *Obstetrics: normal and problem pregnancies*, 4th edition New York, Churchill Livingstone 63-91.
6. Abramowicz S, Abramowicz SJ, Dolwick M (2006) Severe life-threatening maxillofacial infection in pregnancy presented as Ludwig's angina. *Infect Dis Obstet Gynecol* 2006: 51931.
7. Moorhead K, Guiahi M (2010) Pregnancy complicated by Ludwig's angina requiring delivery. *Infect Dis Obstet Gynecol* 158264.
8. Robert R M, Nina S H, Martin G (2016) *Clin Dermatol* 34: 368-377.
9. Gupta AK, Dhulkhed VK, Rudagi BM (2009) Drainage of Ludwigs angina in a pregnant patient under superficial cervical plexus block. *Anaesth Pain and Intensive Care* 13: 68-70.
10. Lawrenz DR, Whitley BD, Helfrick JF (1996) Considerations in the management of maxillofacial infections in the pregnant patient. *J Oral Maxillofac Surg* 54: 474-485.
11. Giglio JA, Lanni SM, Laskin DM, Giglio NW (2009) Oral health care for the pregnant patient. *J Can Dent Assoc* 75: 43-48.
12. Emily E, Bunce , Robert P Heine (2020) *Extremity Edema during late pregnancy*. MSD manual.
13. Doumbia-Singare K, Timbo S K, Keita M, Ag Mohamed A, Guindo B, et al. (2014) Cervico-facial cellulitis during pregnancy: about a series of 10 cases in Mali. *Bull Soc Pathol Exot.* 107: 312-316.
14. López NJ, Smith PC, Gutierrez J (2002) Periodontal therapy may reduce the risk of preterm low birth weight in women with periodontal disease: A randomized controlled trial. *J Periodontol* 73: 911-924.
15. Jarjoura K, Devine PC, Perez-Delboy A, Herrera-Abreu M, D'Alton M, et al. (2005) Markers of periodontal infection and preterm birth. *Am J Obstet Gynecol* 192: 513-519.
16. Fomete B, Agbara R, Osunde DO, Ononiwu CN (2015) Cervicofacial infection in a Nigerian tertiary health institution: a retrospective analysis of 77 cases. *J Korean Assoc Oral Maxillofac Surg* 41: 293-298.
17. Osunde OD, Bassey GO, Ver-or N (2014) Management of Ludwig's Angina in Pregnancy: A Review of 10 Cases. *Annals of Medical and Health Science Research.* 41: 361-364.
18. Wazir S, Khan M, Mansoor N, Wazir A (2013) Odontogenic Fascial Space Infections in Ppregnancy – A study. *Pak Oral Dent J* 33: 17-22.
19. Naseem M, Khurshid Z, Khan HA, Niazi F, Zohaib S, et al. (2016) Oral health challenges in pregnant women: Recommendations for dental care professionals. *The Saudi Journal for Dental Research* 7: 138-146.
20. Krasagakis K, Samonis G, Valachis A, Maniatakis P, Evangelou G, et al. (2011) Local complications of erysipelas: a study of associated risk factors. *Clin Exp Dermatol* 36: 351-354.
21. Titou H, Ebongo C, Bouati E, Boui M (2017) Risk factors associated with local complications of erysipelas: a retrospective study of 152 cases. *Pan Afr Med J* 26: 66.
22. Bartholomeeusen S, Vandenbroucke J, Truysers C, Buntix F (2007) Epidemiology and comorbidity of erysipelas in primary care. *Dermatology* 215: 118-122.
23. Daum RS ML, Immergluck L, Fritz S, Stephanie Fritz, C Buddy Creech, et al. (2016) Clindamycin Versus Trimethoprim-Sulfamethoxazole Versus Placebo for Uncomplicated Skin and Soft Tissue Abscesses. *Open Forum Infect Dis* 2016: 1684.
24. Talan DA, Mower WR, Krishnadasan A, Fredrick M Abrahamian DO, Frank Lovecchio, et al. (2016) Trimethoprim Sulfamethoxazole versus Placebo for Uncomplicated Skin Abscess. *N Engl J Med* 374: 823-832.
25. Thiebaut S, Duvillard C, Romanet P, Folia M (2010) Prise en charge des cellulites cervicales avec ou sans extension médiastinale. *Rev Laryngol Otol Rhinol* 131: 187.
26. Hemmige V, McNulty M, Silverman E, David MZ (2015) Recurrent skin and soft tissue infections in HIV-infected patients during a 5-year period: incidence and risk factors in a retrospective cohort study. *BMC Infect Dis* 15: 455.
27. Oh CC, Ko HC, Lee HY, Safdar N, Maki DG, et al. (2014) Antibiotic prophylaxis for preventing recurrent cellulitis: a systematic review and meta-analysis. *J Infect* 69: 26-34.
28. Keefer C S, Spink W W (1936) Studies of Hemolytic Streptococcal Infection: Factors Influencing Outcome of Erysipelas, *J Clin Investigation* 15: 17-19.
29. Hoyne AL, Wolf AA, Prim L (1939) Fatality Rates in Treatment of 998 Erysipelas Patients: Influence of Sulfonamide. *JAMA.* 113: 2279-2281.
30. Williams W (1930) *Obstetrics*, New York, D. Appleton & Co p. 588.
31. ADAIR F L and STIEGLITZ E J (1934) *Obstetric Medicine: The Diagnosis and Management of the Commoner Diseases in Relation to Pregnancy*. Philadelphia, Lea & Febiger.

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