

Cutaneous Anthrax on Eyelid in a Pregnant Woman

Gebe Hastada Göz Kapağı Şarbonu

Emine Parlak¹, Ayşe Erturk², Serpil Erol³, Mehmet Parlak¹, Zula Ozkurt¹

¹Department of Infectious Diseases and Clinical Microbiology, Atatürk University School of Medicine, Erzurum, Turkey

²Department of Infectious Diseases and Clinical Microbiology, Recep Tayyip Erdogan University School of Medicine, Rize, Turkey

³Department of Infectious Diseases and Clinical Microbiology, Haydarpaşa Numune Training and Research Hospital, İstanbul, Turkey

Abstract

A 32-year-old patient who was 17 weeks of pregnant referred to our hospital due to a lesion on the eyelid and swelling on her face. Patient's history revealed that she helped her husband for slaughtering of a sick animal and contacted with the meat. A scabby lesion was detected on the inferior eyelid with hyperaemia around, central necrotic appearance and swelling. The diagnosis of anthrax was performed based on her epidemiological data, physical examination findings, and *Bacillus anthracis* were seen on direct preparation. This case was considered worthy to present since she was pregnant, the disease was located on the inferior eyelid, which is a rare place for location, and caused no complication or sequel either in mother or in baby.

Keywords: *Bacillus anthracis*, cutaneous anthrax, eyelid, pregnancy, zoonosis

Öz

Ötuz iki yaşında ve 17 haftalık gebe olan hasta, göz kapağında yara ve tüm yüzünde şişlik şikâyetleri ile hastanemize sevk edildi. Hastanın hikâyesinden eşiyile hasta hayvan kesimine katıldığı, ete temas ettiği öğrenildi. Sağ göz alt kapağında kenarları hiperemik ortası nekroze görünümlü krutlu lezyon ve tüm yüzde boyuna kadar yayılan ödem saptandı. Antibiyotik kullanan hastanın kültürlerinde üreme olmadı. Şarbon tanısı, epidemiyolojik hikâyesi, fizik muayene bulgusu ve direkt preparatta *Bacillus anthracis* görülmesi ile konuldu. Hastanın tedavisi için on gün penisilin verildi. Bu olgu, hastanın gebe olması, ender bir yerleşim olan alt göz kapağına yerleşmesi, anne ve bebekte herhangi bir komplikasyon ve sekele neden olmaması nedeniyle sunulmaya değer bulunmuştur.

Anahtar Kelimeler: *Bacillus anthracis*, deri şarbonu, göz kapağı, gebelik, zoonoz

Introduction

Anthrax is an endemic disease in Turkey and may occasionally cause epidemics. It is more prevalent in persons dealing with livestock farming. The infection is transmitted to human from infected animals by direct contact, eating the infected meat or inhaling the spores. In human, the disease is seen in three forms as cutaneous, pulmonary (inhalation) and intestinal. Cutaneous anthrax accounts for 95% of the cases [1] and is mainly seen in the head, neck and upper extremities. Although eyelid involvement is common among head locations, lower eyelid is rarely involved [2]. Eyelid anthrax may result in scarring, ectropion, and even blindness due to corneal scarring [2-4]. Thus, early diagnosis and appropriate treatment in eyelid anthrax are important. In the literature, pregnant cases have been published who resulted in premature birth, congenital infection and maternal mortality [5, 6]. There have been cases with no complication as well [7, 8]. This paper presents eyelid anthrax,

which was developed in a pregnant woman at the age of 32 following slaughtering.

Case Report

A 32-year-old female patient presented with a lesion on the right eye and swelling on her face. It was learned that she was 17 weeks of pregnant and helped her husband, who was dealing with livestock farming, in slaughtering for a sick animal four days ago and contacted with the meat. The patient stated that the lesion on her right lower eyelid was appeared as an itchy swelling after contacting with the infected meat and then transformed into a black scabby lesion (Figure 1). Her husband had similar lesion on his hand. Her general status was moderate; she was conscious, oriented, and cooperated. The body temperature was 38.8°C, pulse rate was 92/min, arterial blood pressure was 130/80 mm/Hg, and respiratory rate was 24/min. A 4x2 cm scabby lesion was detected on the right lower eyelid with hyperaemia around and central

This study was presented at the 5th Euroasia Congress of Infectious Diseases, 15-18 May 2013, Tirana, Albania.



Received: December 09, 2014 / Accepted: April 17, 2015

Correspondence to: Emine Parlak E-mail: eparlak1@yahoo.com

©Copyright 2016 by the Atatürk University School of Medicine - Available online at www.eurasianjmed.com

DOI: 10.5152/eurasianjmed.2015.15131



Figure 1. Lower eyelid cutaneous anthrax.

necrotic appearance (Figure 1). There were swelling, oedema, and hyperaemia on both eyes being more prominent on the right eye. Oedema was also present on the whole face, neck and upper lip. She had no gastrointestinal or respiratory complaints. Ophthalmic examination revealed that anterior segment structures were normal. On her obstetric examination, her pregnancy was normal and there was no sign of uterus contraction or cervical dilatation, which are the indicators of premature labour. In the laboratory analyses, leukocyte count was $18600/\text{mm}^3$, erythrocyte sedimentation rate was 24 mm/h and C-reactive protein was 55 mg/L (0-5 mg/L). Other laboratory workups were normal. Gram staining of the sample obtained from the lesion demonstrated a polymorph nuclear leukocyte and gram-positive bacilli. Blood and smear cultures showed no growth. Patient was diagnosed with cutaneous anthrax, crystallized penicillin was started at the dose of 24 million units/day (8 million units x 3) and procaine penicillin, 1.6 million units/day (800,000 units x 2), for 5 days. The patient had a typical scar on the eyelid accompanied by massive oedema around. Examination on ophthalmic consultation revealed no damage in the conjunctiva, cornea or other ocular configurations. On her optic magnetic resonance imaging, optic nerve was normal and the globe was symmetrical and in its normal size. Oedema and hyperaemia regressed on the 4th day of the treatment. The lesion of the patient healed without any complication such as scarring, ectropion or loss of vision. The patient was discharged from the hospital after 12 days. However, she was followed-up regularly until delivery. The scab on the lesion fell off at the second month after hospital discharge. The patient's informed

consent was obtained. On her follow-up, the patient gave birth to a healthy baby. No congenital infection was detected during 1-year follow-up of the baby.

Discussion

Naked parts of the body such as face and extremities are the most common localizations of cutaneous anthrax. Eyelid is the most common localization site on face. Whilst the mortality rate of cutaneous anthrax in untreated patients is 10%-20%, today it has decreased to less than 1% with early diagnosis and appropriate and timely treatment [2].

Typical periorbital anthrax begins from the eyelid and extends towards the lower parts of the face. Rupture of the vesicles containing serohemorrhagic fluid results in scar formation [2]. Our patient had typical scarring on the eyelid accompanied by intensive oedema around. Eyelid anthrax may lead to serious complications such as scarring and ectropion [2-4]. Yorston et al. [4] reported cicatricial ectropion in 8 of 11 cases and corneal scarring in the remaining 3 cases. Soysal et al. [2] achieved cosmetic and functional outcomes with reconstructive surgical procedure performed to place the full-thickness skin graft after a certain time in a patient who developed ectropion subsequent to eyelid anthrax. In another study, a 4-year-old child who was hospitalized due to the pre-diagnosis of preseptal cellulitis was diagnosed with anthrax depending on further analyses and a scar was left on the right upper eyelid after the treatment [3]. Barnard [5] reported a lesion, which started on a single eye passed to the other eye and led to bilateral exophthalmos and optic atrophy.

There are limited numbers of cases in the literature describing anthrax in pregnant women [6-9]. The complications in mother and baby and their management are unclear. A systematic review written by Meaney-Delman et al. [9] included 17 pregnant women, 2 postpartum women, and one nursing woman. They stated that 16 women and 12 babies died; however, the fatal cases belonged to the pre-antibiotic period. In that particular review, anthrax was found to be associated with high maternal and foetal mortality rates both before and after the delivery [9]. In Iran, a pregnant woman who was followed-up for eyelid anthrax died due to excessive oedema and dyspnoea. No evidence of infection was detected in the baby followed for one year after delivery [6].

Kadanali et al. [7] reported two pregnant cases with anthrax. The first case who was 32 weeks of pregnant developed scar, excessive oedema, fever, and dyspnoea and preterm birth happened despite 10 days penicillin treatment. In the second case, who was 33 weeks of pregnant, preterm birth happened despite successful treatment of the anthrax lesion on the wrist with penicillin. In the present case, absence of preterm birth was attributed to the early stage of pregnancy and to the appropriate treatment commenced early.

Penicillin, chloramphenicol, tetracycline, erythromycin, streptomycin and quinolones can be used for the treatment

of anthrax [1]. Penicillin remains as the first choice of treatment in cutaneous anthrax. Others are alternative antibiotics that might be chosen. Doxycycline and ciprofloxacin are not recommended during pregnancy except for life-threatening situations. It has been reported that doxycycline can be used during the first trimester for a short time for one or two weeks since the adverse events of doxycycline on bone and teeth are dose-dependent and appear in the long-term. In the United States of America, the Committee on Obstetric Practice of the American College of Obstetricians and Gynecologists (ACOG) released an opinion on the management of anthrax in asymptomatic pregnant women and women in lactation period who were exposed to anthrax after terrorist attack. ACOG recommended ciprofloxacin or amoxicillin in the event of high-risk exposure assessed by local health authorities and of confirmed environmental contamination [10].

In conclusion, there is limited number of pregnant anthrax cases in the literature and the present case is conspicuous since it has not resulted in any maternal or foetal complication or sequel.

Informed Consent: Written informed consent was obtained from the patient who participated in this case.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - E.P.; Design - E.P., Z.Ö.; Supervision - M.P.; Resources - E.P.; Materials - S.E.; Data Collection and/or Processing - E.P.; Analysis and/or Interpretation - E.P., A.E.; Literature Search - A.E.; Writing Manuscript E.P.; Other - M.P.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this case has received no financial support.

References

1. Doğanay M, Eşel D. Bacillus anthracis, and other Bacillus species. In: Topçu AW, Söyletir G, Doğanay M, editors. Infectious Diseases and Microbiology. 2nd Ed. İstanbul: Nobel Tıp Kitabevi, 2002. p. 1533-43.
2. Soysal HG, Kiratlı H, Recep OF. Anthrax as the cause of preseptal cellulitis and cicatricial ectropion. Acta Ophthalmol Scand 2001; 79: 208-9. [\[CrossRef\]](#)
3. Celebi S, Celebi H, Celiker UO, Kandemir B, Alagöz G, Esmerligil S. Anthrax as the cause of preseptal cellulitis. Acta Ophthalmol Scand 1997; 75: 462-3. [\[CrossRef\]](#)
4. Yorston D, Foster A. Cutaneous anthrax leading to corneal scarring from cicatricial ectropion. Br J Ophthalmol 1989; 73: 809-11. [\[CrossRef\]](#)
5. Barnard NAS. Anthrax of the eyelid. Ophthalmic Physiol Opt 1990; 10: 300-1. [\[CrossRef\]](#)
6. Kohout E, Sehat A, Ashraf M. Anthrax: A Continuous Problem in Southwest Iran. Am J Med Sci 1964; 247: 565-75. [\[CrossRef\]](#)
7. Kadanali A, Tasyaran MA, Kadanali S. Anthrax during Pregnancy: case reports and review. Clin Infect Dis 2003; 36: 1343-6. [\[CrossRef\]](#)
8. Tomaszewicz K, Modrzewska R. Facial Cutaneous anthrax in a pregnant woman: a case report. Braz J Infect Dis 1998; 2: 304-7.
9. Meaney-Delman D, Zotti ME, Rasmussen SA, et al. Anthrax cases in pregnant and postpartum women: a systematic review. Obstet Gynecol 2012; 120: 1439-49. [\[CrossRef\]](#)
10. ACOG Committee Opinion number 268, February 2002. Management of asymptomatic pregnant or lactating women exposed to anthrax. American College of Obstetricians and Gynecologists. Obstet Gynecol 2002; 99: 366-8.