CASE REPORT

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Anthrax in pregnancy: Case Report

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ABSTRACT

A 28 year-old 33 week-pregnant patient who came into contact with the flesh of a slaughtered sick-animal applied to our hospital with a wound on the left hand and swelling on the entire elbow and armpit. The middle falls shaped, black colored, hyperemic lesions on the edges of the distal parts of 2nd and 3rd fingers at the left hand and also lymphadenopathies spreading to whole arm and the armpit were observed. Anthrax is diagnosed according to the patient's epidemiological history, physical examination findings, *Bacillus anthracis* presence in direct preparation and its propagation in the culture. The patient was treated with penicillin for 10 days. This case was presented as the patient was pregnant and there was no complications in the mother and the baby.

Key Words: Bacillius anthracis, cutaneous anthrax, pregnancy

Introduction

Anthrax is a zoonotic infectious disease transmitted to humans who come into contact with infected animals or contaminated animal products. Anthrax is primarily a disease of wild and domestic herbivores and infects to animals thorough soils contaminated with anthracis spores. *Bacillus anthracis*, the etiologic agent of anthrax, is a large, gram positive, bacillus shaped. The name anthracis was derived from old-greek word meaning 'coal' as the symptoms of the disease include black color, coal-like skin lesions. Anthrax can occur in three different forms in humans: cutaneous anthrax is acquired thorough direct contact when humans slaughtering-skinning infected animals, and handling contaminated meats; gastrointestinal anthrax can occur after people eating inadequately cooked meats, and rarely pulmonary anthrax acquired by as a result of inhalation of spores. Majority of cutaneous anthrax, 95%, is seen in the head, neck, and upper exterimites (1). Therefore, laboratory workers and livestock breeders are under risk. Generally, the incubation period of the disease is 2-7 days. Early diagnosis and treatment are influential on fetal and maternal results. In the literature there are studies reporting premature birth, congenital infection, and maternal mortality (2,3) and some cases without any complications have been reported as well (4,5). This article presents a case of a pregnant woman who develops disease after contacting an infected animal's flesh.

Case Report

A 28 year-old woman with 33rd gestational-week applied to hospital with black, necrotic, hyperemic edged, middle falls shaped lesions on 2nd and 3rd fingers of her left hand in addition to swelling along the left arm. Physical examination of the patient revealed lymphoadenopathies along the arm and armpit. According to the patient's story, she has directly contacted with the diseased animal's flesh about 6 days ago. The patient noted that the lesions on the 2nd and 3rd fingers of the left hand emerged after contacting with the flesh of the diseased animal (Figure 1). General state of the patient was normal, conscious open, body temperature 37.9, pulse rate 94, blood pressure 120/80, and white blood cell count, crp, hb was determined as 13,400, 6.5, 12.5 respectively in laboratory examinations. The other laboratory tests was monitored as normal. The patient had no gastrointestinal and respiratory complaints. In the obstetric examination, the results were in agreement with 33rd gestational week, amnion fluid index was adequate, fetal heart rate present, placenta located on the front wall, and the estimated mean fetal weight was 2,350 g. Non stress test was reactive and no contractions were monitored. Cervical length was measured as 35 mm. The patient was admitted to obstetrician's gynecology clinic and consulted to the division of infectious diseases. Culture and swab samples were taken from the lesions. *Bacillius anthracis* was observed in direct preparation, and propagation in the culture was observed in following days. The

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patient was treated with procaine penicillin 1 million unit/day (800,000U X 2) with the diagnosis of cutaneous anthrax. Remission in edema and lymphopathies on the 3rd day and in lesions on 6th day of treatment was observed (Figure 2). There was no detectable obstetric complication during the treatment of the patient. The patient was followed up regularly until the birth, obstetric examination was normal in the following gestational weeks, no tissue loss or scarring was observed in the lesions. A baby girl was born with spontaneous vaginal delivery on the 39th gestational week with 9/10 apgar score at the weigh of 3,100 g. No congenital infection was observed.

Discussion

The number of anthrax cases defined in pregnancy in the literature is limited (3,6). Therefore, the fetal and maternal complications that can occur and how to manage such cases is not clear enough. A systematic review authored by Meaney-Delman et al. (6) reported a total of 20 anthrax diagnosed patient including 17 pregnant, 2 postpartum, and 1 nurse. 16 women and 12 baby cases died, but these deaths include pre-antibiotic period. In this review, it was found that anthrax is closely related to high maternal and fetal mortality rates both at prenatal and postpartum periods.

Kadanali et al. (4) reported two cases displaying anthrax development during pregnancy period. In the first case scar, massive edema, fever, dyspnea, premature birth at 32nd gestational week occurred despite 10 days of penicillin treatment. In the other case, even though anthrax lesions subsidenced due to penicillin treatment baby was born prematurely at 33rd week of gestation. In the current case, the remission of lesions and occurence of birth at 39th gestational week is thought to be linked with early diagnosis and treatment.

Penicillin, chloramphenicol, tetracycline, erythromycin, streptomycin and quinolone can be used in anthrax treatment (1). Penicillin is the first choice in the treatment of cutaneous anthrax. The use of doxycycline and ciproalexine is not recommended except in life-threatening situations. In the United States, the American Academy of Obstetrics and Gynecology (ACOG) has published their opinions regarding management of anthrax exposed asymptomatic pregnant women and breastfeeding mothers after a terrorist attack. ACOG recommends use of ciprofloxacin or amoxicillin in high-risk exposure areas assessed by local health authorities when the environmental pollution is confirmed (7).

As a result, only a limited number of anthrax in pregnancy cases were reported in the literature thus far so the fetal and maternal outcomes are not fully known. More cases are needed for the follow-up and management of these patients. Therefore, we believe that this case is worthy of being presented.

Fig. 1. Anthrax lesions at first admission to the hospital

Fig. 2. Anthrax lesions on the 6th day of treatment

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