

Letter to the Editor

Cutaneous Anthrax Outbreak in the Trakya Region of Turkey

Kuloğlu et al. Cutaneous Anthrax Outbreak

Figen Kuloğlu, Alper Akin Gözübüyük, Mehmet Kara, Filiz Akata

Department of Infectious Diseases, Trakya University School of Medicine, Edirne, Turkey

Address for Correspondence: Figen Kuloğlu, Department of Infectious Diseases, Trakya University School of Medicine, Edirne, Turkey

Phone: +90 532 363 95 10 e-mail: figenkul@yahoo.com

Received: 7 December 2018

Accepted: 28 January 2019

DOI: 10.4274/balkanmedj.galenos.2019.2018.12.19

Cite this article as:

Kuloğlu F, Gözübüyük AA, Kara M, Akata F. Cutaneous Anthrax Outbreak in the Trakya Region of Turkey. *Balkan Med J* 2019

To the Editor,

A 34 years old female patient presented to our hospital with high fever (39.5°C), a dark brown lesion on the dorsal side of her right hand, erythema on the medial side of her right arm extending from her right hand to axilla, right axillary lymphadenopathy and pain in her right arm. She had a history of contact dermatitis on her hands for many years before she came to Enez for a holiday ten days ago. She bought ground meat from the butcher shop and two days after she handled the raw meat, a small pruritic papule appeared on the dorsal side of her right hand. The lesion progressed to a dark brown vesicle with a depressed black necrotic center surrounded by edema (Figure 1). Although she had been given amoxicillin-clavulanate for two days by her family physician, the patient had high fever for two days and an erythema appeared on the medial side of her right arm. Her WBC count was 13640/mm³, with 76% polymorphonuclear leukocytes and 18% lymphocytes. After admittance, she was hospitalized with a clinical diagnosis of cutaneous anthrax with lymphangitis. Vesicular fluid was aspirated for Gram stain and culture, and 20 million unit of Penicillin G was started. After 24 hours of treatment, fever and lymphangitis resolved. No microorganism could be detected on Gram stain of the vesicular fluid and there was no culture growth. After four days of parenteral treatment, the patient was discharged with oral ciprofloxacin therapy for seven days and written informed consent was taken from the patient.

One day later than the first case, A 60 years old female patient was admitted to the hospital with the clinical diagnosis of cutaneous anthrax. When the patient was questioned, it was learnt that her family slaughtered and butchered a cattle for their daughter's wedding dinner ten days ago.

When we learnt that the other members of the family (2 men, 2 women) had come into contact with the infected animal's meat and had similar complaints, we immediately reported the incident to the Public Health Department and Provincial Directorate of Ministry of Food, Agriculture and Livestock in Edirne, to investigate the infected meat and the people who were exposed to infected meat. Edirne, Enez, Hisarlı village was taken into quarantine by the Directorate of Public Health and Provincial Directorate of Ministry of Food, Agriculture and Livestock of Edirne. The entry and exit of animals to the region was prohibited. The territory where the diseased animal was slaughtered and the butcher shop were taken under control, cleaned up and decontaminated. The registered animals were controlled and anthrax vaccine was administered. Samples of meat and swabs were taken from the meat in the house, the meat at the butcher shop and the meat mincer, and were sent to the Veterinary Control Institute of Pendik. All the remaining meat was destroyed. Microscopic examination of meat revealed gram positive bacilli, and *Bacillus anthracis* was grown in culture.

Anthrax is a zoonotic disease endemic in Turkey (1,2). During the four years between 2010 and 2013, six patients with anthrax (five patients with cutaneous anthrax and one with severe sepsis) were treated in Trakya University Hospital (unpublished data). There was no reported case of anthrax in 2014, however, in August 2015, seven patients with cutaneous anthrax were admitted to the hospital; five of them after slaughtering a cattle and chopping meat for a wedding dinner. The first patient who was admitted to the hospital with cutaneous anthrax had come to Enez for a holiday and bought ground meat from the butcher shop, not knowing that the

meat she bought was prepared from the meat of infected cattle, and she was the sixth patient associated with this outbreak.

Anthrax is primarily a disease of grazing herbivores, cattle and sheep, in Turkey (1,2). Naturally acquired human cases are usually associated with exposure to anthrax-infected animals and animal products. Majority of human cases (95.8%) are cutaneous anthrax. *Bacillus anthracis*, the causative agent of anthrax, is a large non-motile spore-forming gram-positive bacillus. Penicillin used as the first-choice treatment for anthrax is still effective in Turkey (1, 2, 3, 4). Bacteremia secondary to cutaneous anthrax may lead to seeding of central nervous system or lungs. Hospitalization is warranted for all patients with cutaneous anthrax with signs of systemic involvement, bacteremia, anthrax meningitis, gastrointestinal anthrax or inhalation anthrax. As these clinical forms are life-threatening, early clinical diagnosis and administration of antibacterial drugs are critical to improve survival (1,2,3,4). Sepsis and central nervous system infection with resulting hemorrhagic meningoencephalitis are always fatal as experienced in our hospital in 2005 (5) and 2013 (unpublished data).

In conclusion, uncontrolled slaughtering of diseased animals may cause serious public health problems. The most important point about this outbreak was the growth of *B. anthracis* in the cultures of meat samples that were taken from the meat at the butcher shop, the meat mincer and the meat in the house. Destruction of the meat of the diseased animal prevented a larger outbreak.

REFERENCES

1. Doganay M, Metan G, Alp E. A review of cutaneous anthrax and its outcome. *J Infect Public Health*. 2010;3(3):98-105.
2. Ozkurt Z, Parlak M, Tastan R, Dinler U, Saglam YS, Ozyurek SF. Anthrax in eastern Turkey, 1992–2004. *Emerg Infect Dis* 2005; 11(12):1939–1941.
3. Anthrax in Humans and Animals. 4th edition. Geneva: World Health Organization; 2008.
4. Martin GJ, Friedlander AM. *Bacillus anthracis* (Anthrax), pp: 2391-74. In: Bennett JE, Dolin R, Blaser MJ, eds. *Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases*. 8th ed., Philadelphia: Churchill Livingstone, 2015: 2391-409.
5. Gürcan S, Akata F, Kuloğlu F, Erdoğan S, Tuğrul M. Meningitis due to bacillus anthracis. *Yonsei Med J*. 2005 Feb 28;46(1):159-60.



Figure 1. Anthrax lesion of the first patient; a hyperemic, ulcerated lesion with central necrosis surrounded by edema.