



Eid al-Adha Associated Infections: Three Case Reports

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SUMMARY

The purpose of this report is to raise concern over the importance of zoonotic diseases related to the feast of sacrifice in our country. Sacrificial animals that must be completely healthy may sometimes cause such zoonotic diseases as Crimean-Congo Hemorrhagic Fever (CCHF) and anthrax in people. Our first case is a 27 year-old female patient applying with the complaints of fever, fatigue and loss of appetite. It has been learned that after sacrifice, she drew the tick out of her right groin with her hands and the complaints started 3 days after. Only fever was specified in the physical examination of the patient accepted to the service with CCHF pre-diagnosis. Gingival bleeding, purpuric rashes in upper and lower extremity and abdomen occurred. CCHF-PCR positive was determined. The patient with improved clinical findings not requiring blood product replacement was discharged with full recovery on the 5th day of follow-up. Our second case is a 35 year-old male patient with the complaint of wound and swelling on the left hand. He stated that he collected and salted the hides of sacrificial animal a week ago and then the wound on his hand enlarged. After the examinations, the patient diagnosed with anthrax was treated and discharged with full recovery. The third case is a 33 year-old male patient complaining from an abdominal wound and swelling like acne. It was found that he sacrificed an animal two weeks ago. The patient with normal laboratory parameters was treated for the diagnosis of anthrax and he was discharged after the 7-day treatment. In conclusion, CCHF must be considered for the symptoms of fever and fatigue and anthrax in skin manifestations during the periods of the feast of sacrifice.

Key Words: Crimean-Congo Hemorrhagic Fever, Anthrax, Sacrificial animal

ÖZET

Kurban Bayramı İle İlişkili Enfeksiyonlar: Üç Olgu Sunumu

Bu raporla, ülkemizde, kurban bayramı ile ilişkili zoonotik hastalıkların önemine dikkat çekilmek istenmiştir. Tamamen sağlıklı olması gereken kurbanlık hayvanlar, kimi zaman Kırım Kongo Kanamalı Ateşi hastalığı (KKKA) ve şarbon hastalığı gibi zoonotik hastalıkların insanlarda ortaya çıkmasına neden olabilmektedir. Birinci olgumuz, ateş, halsizlik ve iştahsızlık şikayetleri ile başvuran 27 yaşındaki bayan hastadır. Kurban kesimi sonrası sağ kasıkta fark ettiği keneyi kendi eli ile çıkardığı ve şikayetlerinin 3 gün sonra başladığı öğrenilmiştir. KKKA ön tanısı ile servise kabul edilen hastanın fizik muayenesinde sadece ateş saptanmıştır. Gingiva kanaması, üst ve alt ekstremitelerde purpurik döküntüleri gelişmiştir. KKKA-PCR pozitif saptanmıştır. Kan ürünü replasmanı gerekmeyen ve klinik bulguları düzelen hasta, takibinin 5. gününde şifa ile taburcu edilmiştir. İkinci olgumuz, sol elde yara ve şişlik şikayeti olan 35 yaşındaki erkek hastadır. Bir hafta önce kurban derilerini toplayıp tuzladığı ve sonrasında elindeki yaranın büyüdüğünü belirtmiştir. Tetkikleri yapılan hasta, şarbon tanısı ile tedavisi edilmiş ve şifa ile taburcu olmuştur. Üçüncü olgumuz, karında sivilce benzeri yara ve şişlik şikayeti olan 33 yaşında erkek hastadır. İki hafta önce kurban kestigi öğrenilmiştir. Laboratuvar parametreleri normal olan hasta, şarbon tanısı ile tedavi edilmiş ve tedavisi 7 güne tamamlanarak taburcu edilmiştir. Sonuç olarak, kurban bayramı periyodlarında, insanlarda görülen ateş ve halsizlik semptomlarında KKKA, deri bulgularında şarbon hastalığı akıldan çıkarılmamalıdır.

Anahtar Kelimeler: Kırım Kongo Kanamalı Ateşi Hastalığı, Şarbon, Kurbanlık hayvan

INTRODUCTION

Eid al-Adha is a period of four days when approximately 2.5-3 million cattles, sheep and goats are sacrificed in our country each year (Anonymous 2006). Before this period,

an intense animal shipment is performed to the big cities notably İstanbul (Çetin et al. 2011). These sacrificial animals must be healthy. However, the factors of such zoonoses as anthrax, tuberculosis and brucellosis can be

observed primarily. Many zoonotic diseases such as Crimean-Congo hemorrhagic fever (CCHF), anthrax, rabies and brucellosis continue to be an important concern for public health in our country. Zoonotic diseases cause not only negative effects on public health, but also result in economic losses due to the loss of efficiency in animals and death. Due to the fact that Eid al-Adha period changes into hot months in Turkey, an increase in zoonotic diseases mainly CCHF and anthrax cases can be observed in different regions as a result of animal mobility.

CCHF disease is a tick-borne viral infection that progresses with fever, common body ache and bleeding on skin, in mucosa and visceral in small part of cases. Its agent is a RNA virus (reference) belonging to Nairovirus kind of *Bunyaviridae* family. The modes of transmission of CCHF virus are attachment of tick infected with virus, crushing the infected ticks with bare hands and contact of CCHF patients with blood, tissue and other body fluids of viremic animals (Vorou et al. 2007; Akın L 2008; Mertens et al. 2013). Risk groups are composed of farmers, shepherds, butchers, slaughterhouse employees living in endemic region and being active in agriculture and stockbreeding, veterinarians, veterinarian health technicians, health personnel being in contact with infected patients, laboratory staff, soldiers, campers and patient relatives. Depending on the increase in cattle, sheep and goat trade particularly during Eid al-Adha, the disease can be transferred from endemic regions to non-endemic regions through viremic animals and/or infected ticks on these animals (Leblebicioğlu 2010). The disease first observed in our country in 2002 and defined in 2003 is seen from April to October every year and it peaks in June and July. This disease first observed in the province Tokat is heavily seen in the north of Central Anatolia Region, south of Black Sea Region and north of Eastern Anatolia Region.

Anthrax is a bacterial zoonotic infectious disease transmitted to people from gram-negative animals (Acha and Szyfres 2003). The agent of the disease is *Bacillus anthracis* which is a spore forming bacillus being in *Bacillus* group. Anthrax is an endemic disease in our country (MH GDBHS, 2016). Although its prevalence gradually decreases, it is observed more frequently in Central and Eastern Anatolia Regions. Anthrax disease can be observed in our country in every season of the year. However, animal and human anthrax is observed more in hot and dry months (Doğanay 2004). Cutaneous anthrax develops with the direct contact as a result of slaughtering and de-hiding the infected or dead animals and mincing their meat; gastrointestinal system anthrax develops by eating infected meat. The infection can spread from person to person as a result of direct or indirect contact with the infected wound and discharge. Cutaneous anthrax occurs after the inoculation of anthrax spores into the skin via small traumas like a cut, itching or insect bite (MH GDBHS, 2016).

The purpose of this report is to draw attention to the zoonotic diseases related to Eid al-Adha in Turkey

CASES

CASE I. A twenty seven year-old female patient applied to our clinic with the complaints of fever, fatigue and inappetence. It was found that the patient removed the tick she noticed in her right inguinal area after the sacrifice of animal in Mamak county of Ankara province with her hands and her complaints started 3 days after. There weren't any pathological findings apart from 38 °C fever observed in the examination of the patient who was taken into service

with the pre-diagnosis of CCHF. In the laboratory examinations, high fever was observed in follow-ups of the patient having the values Hb:12.9g/dL, platelet:75000 K/uL, AST:110 U/L, ALT:57 U/L, CK:152 U/L, LDH:462 U/L. Gingival bleeding, purpuric rashes in upper and lower extremity and abdomen developed. CCHF PCR positive was established. Platelet value regressed back to 19000 K/uL. The patient not requiring blood product replacement and having improved clinical findings was discharged with full recovery on the 5th day of follow-up.

CASE II. A thirty five year-old male patient applied to our clinic with the complaint of post-traumatic wound and swelling in the left hand. He stated that he collected and salted the hides of sacrificial animal a week ago and then the wound on his hand enlarged. On the left hand dorsum of the patient, there was a necrotic lesion in the center and hyperemic and edematous lesion around at the size of 2x2 cm and there was edema on the left arm (*Figure 1*). With the diagnosis of anthrax, crystallized penicillin treatment was started on the patient having the examination results of WBC: 14200 K/uL, CRP:5.92 mg/L with normal laboratory parameters. The patient with significant regression in the edema as of the 3rd day of the treatment was discharged as outpatient to be given with oral antibiotherapy on the 5th day of the treatment.



Figure 1. A necrotic lesion in the center and being hyperemic and edematous around at the size of 2x2 cm on the left hand dorsum

CASE III. Thirtyfive year-old male patient applied to our clinic with the complaint of abdominal wound and swelling like acne that continued for 3 days. It was found out that the patient sacrificed an animal two weeks ago and in the examination, there were lesions observed with two scars being hyperemic and edematous around and necrotic in the center at the size of 2x2 cm on abdominal right upper quadrant and in diameter of 0.5 cm on the right forearm (*Figure 2,3*). The patient with normal laboratory parameters was hospitalized with the diagnosis of anthrax and ampicillin sulbactam treatment was started. The

patient with regression in his/her edema and hyperemia in the follow-up was discharged after the 7-day treatment.



Figure 2. The lesion being hyperemic and edematous around with a necrotic scar in the center at the size of 2x2 cm on abdominal right upper quadrant



Figure 3. Two lesions being hyperemic and edematous around with a necrotic scar in the center in diameter of 0,5 cm on the right forearm

DISCUSSION and CONCLUSION

Due to the fact that Eid al-Adha period changes into hot months and as a result of increased animal mobility, an increase in zoonotic diseases can be observed in different regions. Our primary strategy concerning zoonoses must be preventing animal-borne diseases and protecting public health (MH,GDBHS 2016). The studies on increasing the awareness of population and people who engage in animals for these diseases and supporting an appropriate approach towards these cases must be sustained. CCHF can be observed before and after Eid al-Adha in the regions apart from the endemic regions due to the animal mobility (Doğanay and Metan 2009). The individuals whose clinical and laboratory findings are compatible despite not having any travel history must be questioned in this period. Necessary protection measures (gloves, gown, glasses, mask etc.) must be worn during the contact with animal blood, tissue or other body fluids of animals. Ticks should be fought in animals. Animal shelters must be built in a way not to allow ticks, cracks and slits should be repaired and calcimined after fighting ticks⁸. It should be taken into account that the course of disease can be subclinical in animals; therefore, the animal can spread disease even if it looks healthy.

Such zoonotic diseases as anthrax can increase as related to Eid al-Adha. Anthrax suspicious lesions shouldn't be touched with the bare hands (Doğanay 2004; Kaya et al. 2002). Suspicious animal carcass should never be touched and cut with bare hands and their meat shouldn't be consumed. Sick or dead animal shouldn't be slaughtered without the suggestion of veterinarian and the skin shouldn't be stripped. Applying modern slaughtering methods in relevant places, generalizing such places all over the country and improving them all the time will yield many benefits in terms of people, animal and environmental health and also the national economy (İnal and Nazlı 1997). In conclusion, central slaughtering places must be set particularly in big cities and animals should be examined by veterinarians before and after the slaughtering in Eid al-Adha (Çetin et al. 2011).

REFERENCES

- Acha PN, Szyfres B (2003). Zoonotic and communicable diseases common to man and animals. In: Bacterioses and Mycoses. 3rd Ed, 21-28, Pan American Health Organization, Scientific and Technical Publication, No:580, Washington, USA.
- Anonymous (2006). 2nd press release on Eid al-Adha for 2006. İstanbul Veterinary Chamber, Food Hygiene and Public Health Unit, Issue: 2006/1042.
- Akın L (2008). Crimean-Congo hemorrhagic fever. *Hacettepe Tıp Dergisi*, 39, 134-143.
- Bente DA, Forrester NL, Watts DM, McAuley AJ, Whitehouse CA, Bray M (2013). Crimean-Congo hemorrhagic fever: History, epidemiology, pathogenesis, clinical syndrome and genetic diversity. *Antiviral Res*, 100, 159-189.
- Çetin Ö, Dümen E, Kahraman T, Bingöl EB, Büyükcünal SK (2011). Selection, slaughtering and hygiene of sacrificial animals. *J Fac Vet Med Istanbul Univ*, 37(1), 63-67.
- Çetin Ö, Kahraman T, Büyükcünal SK (2006). Microbiological evaluation of food contact surface at redmeat processing plants in İstanbul Turkey. *Ital J Anim Sci*, 5, 19-27.
- Doğanay M (2004). Anthrax. In: Cohen J, Powderly WG (Ed): *Infectious Diseases*, 2nd Ed. 185, 6, Mosby, Edinburgh.
- Doğanay M, Metan G (2009). Human anthrax in Turkey from 1990 to 2007. *Vector Borne Zoonotic Dis*, 9, 131-139.
- Ergönül A (2006). Crimean-Congo hemorrhagic fever. *Lancet Infect Dis*, 6(4), 203-214.
- Hayes PR (1995). Hygiene and training of personel (Chapter 12). In: Hayes PR (Ed), *Food Microbiology and Hygiene*, 434-435, Springer Science+Business Media Dordrecht. ISBN 978-1-4615-3546-1.

- İnal T, Nazlı B (1997).** Information on slaughterhouse. Saray Medical Publication, İzmir, 161.
- Jamil B, Hasan RS, Sarwari AR, Burton J, Hewson R, Clegg C (2005).** Crimean-Congo hemorrhagic fever: experience at a tertiary care hospital in Karachi, Pakistan. *Trans R Soc Trop Med Hyg*, 99, 577-584.
- Kahraman T, Çetin O, Dümen E, Büyükkunal SK (2010).** Incidence of Salmonellaspp and Listeriamonocytogenes on equipment surfaces and personel hands in meatplants. *Revue Med Vet*, 161(3), 108-113.
- Kaya A, Taşyaran MA, Erol S, Özkurt Z (2002).** Anthrax in adults and children: Are view of 132 cases in Turkey. *Eur J Clin Microbiol Infect Dis*, 21, 258-261.
- Leblebicioglu H (2010).** Crimean-Congo hemorrhagic fever in Eurasia. *Int J Antimicrob Agents*, 36, 43-46.
- Mertens M, Schmidt K, Ozkul A, Groschup MH (2013).** The impact of Crimean-Congo hemorrhagic fever virus on public health. *Antiviral Res*, 98(2), 248-260.
- MH, GDBHS (2016).** Zoonotic Diseases In-service Training Module. Ministry of Health, General Directorate of Basic Health Services, Department of Zoonotic Diseases, Publication no: 799. IV, Ankara, 2011. ISBN: 978-975-590-328-6, <http://sbu.saglik.gov.tr/Ekutuphane/kitaplar/Zoonotik%20Hastaliklar%20Katilimci%20Kitabi.pdf>, Ankara, Access date: 10.06.2016.
- Ser Ö, Çetin H (2016).** The current situation of Crimean-Congo hemorrhagic fever. *TAF Prev Med Bull*, 15(1), 58-68.
- Troller JA (1993).** Sanitasyon in food processing. Academic Press Inc., 2nd ed., 6, Cincinati, Ohio, ISBN 0-12-700655-0, California.
- Uğur M, Nazlı B, Bostan K (1999).** Lecture notes on slaughter house information and meat examination. İU Veterinary Faculty Publication, 109, İstanbul.
- Uğur M, Nazlı B, Bostan K (2003).** Food hygiene. 274, Technic Publication, Durak Copy Center, İstanbul.
- Vorou R, Pierroutsakos IN, Maltezoou HC (2007).** Crimean-Congo hemorrhagic fever. *Curr Opin Infect Dis*, 20, 495-500.