

A case of cutaneous form of pasteurellosis complicated by renal pathology

Dmitrovskiy AM*; Ospanbekova NK; Davlyatshin TI; Khaiyrova UO; Iskakova FA; Kamytbekova KZh

***Corresponding Author: Prof. Andrey M Dmitrovskiy, MD, DoS**

Kazakh Russian Medical University, 51/53 Ablay Khan St, A05A2K4, Almaty, Kazakhstan.

Tel: +77017856715; Email: am_dmitr@mail.ru

Abstract

Pasteurellosis is an animal (zoonotic) disease, usually caused by *Pasteurella multocida*. A human can get infected from animals. This usually happens by direct contact with sick animals. In livestock regions Pasteurellosis can occur in the form of outbreaks in farm animals, including causing their death. In the case of slaughter and butchering of sick animals, a human can become infected by contact with their meat and internal organs, lymph nodes. In animals, Pasteurellosis can occur both very easily and very hard. In Europe and the USA, Pasteurellosis is associated with bites or scratches of domestic animals (cats, dogs) [1], in Kazakhstan Pasteurellosis is usually associated with the slaughter and butchering of sick farm animals. In humans Pasteurellosis can occur in the various clinical forms, more often as a cutaneous infection with regional lymphadenitis [2].

Keywords

Pasteurellosis; Clinical manifestation; Cutaneous form; Renal complication.

Introduction

Pasteurellosis in Kazakhstan has always been common among farm animals. Veterinarians are actively fighting this infection, including vaccination of animals. The reservoir of this infection can be wild animals, including rodents, from which infection gets to agricultural and domestic animals.

Mass deaths of wild steppe antelopes - saigas - are regularly recorded in Kazakhstan [3].

We have many years of experience working with patients with Pasteurellosis since the early 90s, as well as surveys of wild and domestic animals. Almost all cases of human disease with Pasteurellosis in Kazakhstan were associated with the slaughter of sick animals and contact with their meat and internal organs [4-7].

Case Report

Female, 46-year-old (case history number 8783), is an office worker, lives in a comfortable apartment in Almaty, there are no pets at home. She became acutely ill on 01.10.2022, spots of hyperemia, swelling, pain and burning sensation appeared in the area of the palmar surface of the left hand, in place of which three primary cutaneous affects developed, they past stages: spot, papule, vesicle, pustule. Edema of the left hand has developed. There were general intoxication, fever, chills.

It was found out from the survey that the patient was butchered meat (beef and horse meat) brought from the district and bought from a private farmer, without veterinary examination on 28.09.2022. (incubation period of 3 days).

At first, she tried to be treated on her own - aspirin, locally - levomicol ointment, there was no improvement, the axillary lymph nodes on the left increased. On 04.10.2022 (4th day of the illness) the patient went to the medical center to see a surgeon. The surgeon performed surgical treatment of primary cutaneous affects at the stage of pustules on the palm, without prescribing antibacterial therapy. There was no improvement in the condition again and the patient turned and was hospitalized in an infectious hospital on 05.10.2022 (5th day of illness).

Upon hospitalization there were complaints of general malaise, weakness, chills, swelling, redness, pain and burning sensation in the area of the left hand, there were the remnants of primary affects, after their removal by the surgeon on the left palm. The condition is of moderate severity due to the symptoms of intoxication. Consciousness was clear, state of health suffers. She was sluggish. There were swelling, hyperemia (Figure 1), soreness during palpation of the left hand, on the palmar surface at the level of 3-4 fingers there are healing wounds at the site of removed primary cutaneous affects (Figure 2). Enlarged lymph nodes, moderately painful during palpation, were palpated in the left axillary region. The liver was palpated 1-1.5 cm below the edge of the costal arch, elastic consistency, painless.

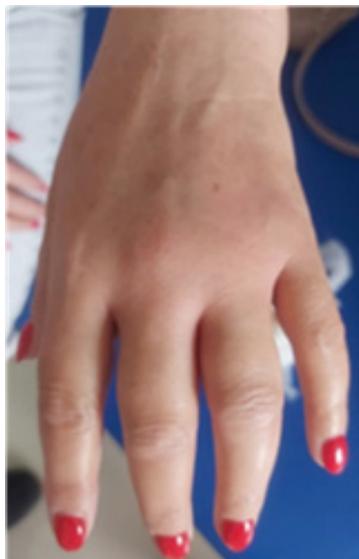


Figure 1: Remnants of primary cutaneous affects after surgical treatment.



Figure 2: Remnants of primary cutaneous affects after surgical treatment.

Upon admission, blood pressure was 110/70 mm. Hg, pulse - 88 in 1 min., temperature was 36.8°C. BDD - 18 in 1 minute. SO-98.

In the blood on 05.10.2022 (5th day of the disease), there were a slight decrease in hemoglobin (115 g/l) and hematocrit (33.9%); normal number of red and white blood cells; and an increase in ESR (37 mm/hour);

Urine was slightly cloudy; specific gravity - 1025.0; pH - 5.5 ; Leukocytes - 6-7 in n/a; Unchanged erythrocytes - 80.00 Ery/uL; Flat epithelium - 3-4 in n/a; Protein - 0.15 g/l;

Penicillin was treated at a dose of 6 million units per day intramuscularly for 6 days; diclofenac, antihistamines, saline solution with ascorbic acid intravenously and nutricomp standard liquid in the form of drinking.

As a result of the treatment, there was an improvement, all the symptoms disappeared, only traces of cutaneous affects remain on the left hand.

In the blood on 11.10.2022 (11th day of the disease) there were - Hemoglobin - 109 g/l; Erythrocytes - 3.78 $10 \times 12/l$; Hematocrit - 31.9 %; ESR - 27 mm/hour;

Nevertheless, there was a pronounced pathology in the urine: leukocytes - 70 in n/a; unchanged erythrocytes - 25.00 Ery/uL; flat epithelium - 8-10 in n/a; although the protein normalized - 0.033 g/l;

ELISA for Pasteurellosis Ig G from 11.10.2022 g (11 day of illness) was positive (result - 0.572, cutoff 0.054).

Thus, the patient became infected through direct contact with infected meat purchased directly from a farmer and not passed a veterinary examination (epizootic of Pasteurellosis in farm animals is noted in the region),

She developed a primary focal cutaneous form of Pasteurellosis (Table 1), with the development of three primary cutaneous affects at the site of the pathogen ingresson in the damaged skin of the palm, the infection was accompanied by local lymphogenic generalization (regional axillary lymphadenitis developed), as well as certain hematogenic dissemination, resulting in increased liver and kidney pathology, apparently Pasteurellosis etiology (Table 1).

The patient was discharged from the infectious diseases hospital on 11.10.2022 (11th day of the illness) with recommendations to continue treatment of renal pathology in a specialized clinic. At discharge, the condition was good, there were no complaints, and the liver was palpated at the edge of the costal arch, elastic consistency. The swelling and hyperemia of the left hand disappeared, there were healing wounds on the site of cutaneous affects on the left palm (Figure 3).

Table 1: Clinical and pathogenetic classification of Pasteurellosis.

	<i>Groups of forms</i>	<i>Primary focal (with regional manifestations)</i>	<i>Generalized</i>	<i>Secondary-focal (with regional manifestations)</i>
Localization of the "entrance gate" of infection (infection through...)	Skin	Cutaneous	Secondary-generalized	Bubonic Pneumonic Purulent tonsillitis Abdominal Meningoencephalitic Pyelonephritic Combined Septic other poorly differentiated forms
	Gastrointestinal tract	Intestinal Abdominal		
	Respiratory tract	Acute respiratory, Pharyngeal, Purulent tonsillitis		
	Unknown (immunosup-pression)	Not manifested	Primary-generalized	
Clinical periods	Incubation	Initial (1-3 days)	Maximum manifestations	Aggravations and Complications
Phases of the infectious process	Implementation and initial adaptation	Primary-focal and regional manifestations	Generalization (hematogenic dissemination)	Secondary-focal and regional manifestations



Figure 3: Healing wounds at the site of cutaneous affects on the 11th day of the disease.

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Authors Information: Dmitrovskiy AM^{1,2*}; Ospanbekova NK¹; Davlyatshin TI³; Khaiyrova UO⁴; Iskakova FA⁵; Kamytbekova K Zh⁶

¹Kazakh Russian Medical University, Almaty, Kazakhstan.

²National Science Center for Extremely Dangerous Infections, Almaty, Kazakhstan.

³Omicron 3D LLP, T-helper laboratory, Almaty, Kazakhstan.

⁴Karaganda Medical University, Karaganda, Kazakhstan.

⁵Al-Farabi Kazakh National University, Almaty, Kazakhstan.

⁶International Kazakh-Turkish University, Shymkent, Kazakhstan.

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