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CASE REPORT

Spotted fever: case report

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Abstract

Spotted Fever is a severe emerging zoonosis caused by the Rickettsia bacteria and transmitted by ticks. This disease can be fatal if it is not diagnosed and treated at the onset of clinical symptoms. Following is the case report of a pediatric patient, resident of a rural area in the interior of Espírito Santo state - Brazil, with spotted fever that progressed poorly. The diagnosis was confirmed using the indirect immunofluorescence technique post morten. Considering its high lethality and the prevalence of the disease in Southeastern and Southern Brazil, this differential diagnosis should be considered in the presence of symptoms and epidemiology suggestive of this condition, in order to reduce morbidity and mortality of the affected population.

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INTRODUCTION

Brazilian Spotted Fever (BSF), a notifiable disease, also known as Typhus, is transmitted by ticks, also called Petechial Fever. It was first recognized in Brazil, in 1929, in São Paulo[1].

Spotted Fever has been reported in São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo, Bahia, Santa Catarina, Paraná, Rio Grande do Sul, Distrito Federal, Goiás, Ceará, Mato Grosso do Sul, Rondônia and Pernambuco. Santa Catarina and São Paulo are the Federated States with the highest incidence rates per 100 thousand inhabitants. It is worth remembering that the it must be notified immediately. The average lethality rate is 32.9%; however, attention is drawn to the Southeast region of Brazil, where the lethality rate is approximately 50%[1,4].

The gram negative bacterium Rickettsia, which causes spotted fever, is an intracellular organism and transmitted by the bite of infected ticks of the genus Amblyomma[1,2].

Although in Brazil the number of confirmed cases of spotted fever has been declining since 2005, mortality rates are around 20 to 30%, due to difficulties in making the diagnosis and establishing the appropriate therapy, associated with the little knowledge about the disease and it's nonspecific symptoms[1,3-4].

Clinical manifestations begin about a week after the tick bite, with high fever, headache, abdominal pain and maculopapular rash. The disease can progress to respiratory and kidney complications, coagulation disorders and encephalitis. Due to the severity of the disease, antibiotic therapy with tetracyclines or chloramphenicol should be started promptly, regardless of laboratory analysis[1,5-6].

Laboratory tests are nonspecific, but for confirmation of the case, culture with Rickettsia isolation is available in Brazil - this is the ideal diagnostic method - the indirect immunofluorescence antibody (IFA), using specific antigens for R. rickettsii, which is the most used. A 4-fold increase in titer in a second sample collected at least 2 weeks after the first should be considered as confirmatory. Other methods used are the polymerase chain reaction (PCR) and immunohistochemistry[1,6].

This report aims to contribute to a better understanding of the disease by healthcare professionals, in order to assist them in the recognition of a suspected case, in addition to describing a confirmed case of spotted fever, showing clinical and laboratory criteria for diagnosis, reinforcing the importance of early identification of the spotted fever and its clinical characteristics, for better prognosis.

CASE REPORT

RV, male, 10 years old, living in a rural area in the state of Espírito Santo, referred to the emergency room of the Alzir Bernardino Alves Maternity and Children's State Hospital, in Vila Velha, with a 3-day fever, associated with headache, myalgia and calf pain, which evolved with diffuse rash, vomiting and diarrhea.

Epidemiological history showed housing close to rats and horses. On physical examination, he was dehydrated, jaundiced (+/4+), pale (+/4+), neck lymph node enlargement and hepatomegaly, the remainder of the examination was unchanged. The laboratory examination showed pancytopenia. We started with Ceftriaxone and volume expansion with 20 ml/kg.

After 14 hours, the patient developed obnubilation, tachypneia, tachycardia, with signs of poor peripheral perfusion, disseminated petechiae and worsening of jaundice. Without response to the initial treatment, he was referred to the pediatric ICU (PICU) with hypotension, violet rash in the lower limbs and bleeding at puncture sites. We intubated the patient and started him on adrenaline - continuous infusion, platelet concentrate, vitamin K and associated oxacillin in antibiotic therapy.

Within 24 hours of hospital admission, the patient worsened his general condition, with non-palpable pulses, multiple hemorrhagic suffusions and renal failure. We started him on vasoactive drugs and blood concentrate, with no response. He progressed to having five cardiac arrests, the last being unsuccessful in resuscitation. He died 12 hours after admission to the PICU. The body was sent to the Death Verification Service (DVS) for diagnostic clarification. Their report confirmed Spotted Fever through indirect immunofluorescence serological reaction.

DISCUSSION

The evolution of Rickettsia is in strict relationship with that of its reservoir animals, equines, rodents, such as capybara, and marsupials, such as opossum. Animals maintain persistent infection by amplifying rickettsiae, as well as transporting potentially infected ticks (2). In this case, the patient lived in a rural area close to horses in the countryside of Espírito Santo, one of the states in Brazil where Spotted Fever has been recorded[3,4,9].

The patient presented a nonspecific febrile condition, generating many diagnostic hypotheses, such as leptospirosis, dengue, salmonellosis and exanthematous viral diseases. With the disease progression, jaundice worsening of and signs of poor tissue perfusion, other differential diagnoses started to be considered, such as meningococcemia, yellow fever, severe form of leptospirosis (Weil's Syndrome), or even other diseases transmitted by ticks, such as Lyme disease[1,4-6.]

In the PICU, the patient progressed with hypotension, multiple hemorrhagic suffusions and renal failure. Combining all the epidemiological data as well as laboratory tests and the evolution of the disease, Spotted Fever was the most probable diagnosis, but not the main one, considering that the confirmation by serology had not yet been determined. Therefore, the patient was treated with broad-spectrum empirical antibiotic therapy, in addition to hemodynamic and ventilatory supports.

The first choice for the treatment of spotted fever is Doxycycline, regardless of age, while chloramphenicol as the second therapeutic option. However, there are technical and therapeutic obstacles due to the lack of parenteral doxycycline in Brazil[1,6,9]. Similarly to the difficulties existing throughout the country, in our settings, the treatment of choice would be intravenous chloramphenicol. Unfortunately, the patient died after the fifth cardiac arrest at the PICU, not providing enough time to start appropriate antibiotic therapy.

The Spotted Fever diagnosis was based on the clinical-epidemiological history and confirmed in the DVS through indirect immunofluorescence in only one sample, since the patient's clinical outcome precluded a second collection. Compulsory notification was made to the epidemiological surveillance center in the municipality of Vila Velha.

Taking into account the high lethality and the prevalence of the disease in the Southeast and South regions of the country, the differential diagnosis of spotted fever should be established in similar clinical conditions, so that there is no delay in diagnosis and treatment, in order to reduce the unfavorable outcome of such condition[6,9].

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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