



MICROBIOLOGY

CHILDHOOD BRUCELLOSIS; THREE CASES FROM NORTH KARNATAKA

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Abstract

Brucellosis is a zoonotic disease and endemic in Belgaum. It is characterized by myriad of nonspecific symptoms like fever, nocturnal sweating, backache, osteoarticular symptoms along with complications. Clinical presentation of this infection is variable as it may manifest a systemic disease. Herewith we present three cases of blood culture positive *B. mellitensis* in pediatric patients. Routine screening for Brucellosis by slide agglutination test can be more helpful in diagnosing PUO.

Keywords: Childhood brucellosis, PUO, Brucella slide agglutination test

Introduction

Brucellosis is primarily a disease of animals such as cattle, goat and sheep. Humans are accidental hosts and can be infected via exposure to infected animals and their products.¹ It is characterized by myriad of nonspecific symptoms along with complications.² This infection can occur at any age including children.³ The incidence of childhood brucellosis is usually under reported and it is ranging between 0.8- 1.6%.^{3,4,5} Sometime it behaves as a systemic infection with heterogeneous symptoms.⁶ In such occasions the patients are subjected for various investigations, which generally do not include brucellosis screening.⁴

Belgaum, being an endemic area for Brucellosis, as a policy we screen all sera received at our lab are for this infection. Here we report three cases of childhood brucellosis as these were investigated for some other diseases.

Material and Methods

The sera of three children were referred to our Hospital a tertiary care health centre of North Karnataka, for febrile agglutination tests. As a policy, we screen all sera for Brucella slide agglutination test which are received in Microbiology laboratory because of Brucella endemicity. We use Brucella colored antigen obtained from IVRI Izzat Nagar India. Three to five ml blood was collected for culture from all the positive patients, when they had come for receiving the reports and culture bottles were incubated at 37^o C in presence of 5-10% CO₂ for 30 days. The isolates were identified as Brucella species using standard methods.⁵ The results were reported to concerned physicians and

patients were treated with standard regimen for brucellosis. There was no recurrence of the disease.

Case No.1: A twelve year old boy from rural area had history of insidious onset of fever since 15 days along with pain abdomen, joint pain and weakness. He was diagnosed as typhoid fever by a local physician and his sample was referred for Widal test. The sample was negative for typhoid fever but was tested positive for Brucella by slide agglutination test. There was no history of contact with animals or drinking raw milk. Interestingly the boy revealed that, he used to eat locally made ice-cream during school hours. *Brucella mellitensis* was grown in culture after 12 days of incubation.

Case No.2; The serum sample from a seven year old boy, whose mother was a midwife, was referred to our laboratory for tuberculosis serology. Clinical diagnosis of tuberculosis was made despite his chest X-ray being normal. His serum was negative for TB Ig M / G by ELISA. He was also investigated for typhoid fever and Widal test was negative. When we tested the patients serum for Brucella slide test it yielded positive result. The diagnosis and serology results were confirmed after *B.mellitensis* was grown from blood culture (after 15 days).

Case No.3: Local pediatrician from Belgaum diagnosed a nine year old boy belonging to farmer's family, as a case of PUO. Patient was presented to the doctor with symptoms having fever and weakness since 10 days. He was sent to our lab for the typhoid investigations. Typhoid fever was ruled out as his samples gave Widal test negative and blood culture yielded no growth after seven days of incubation. When his serum sample was screened for brucellosis using slide test, it was found out to be positive.

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B.mellitensis was isolated from his blood after 20 days of incubation.

Discussion

Brucellosis, as a childhood infectious diseases, is rare in India.³ It is very uncommon under five years of age. In our study all three patients were more than five years. The clinical diagnosis of brucellosis was not made in all the cases. It may be because of clinical features were not suggestive and typical history of exposure to animals or their products was not available in our cases. For the same reasons these cases referred to us to investigate for typhoid or Tuberculosis, because fever was common symptom. Clinical features are indistinguishable as these organisms create a diagnostic dilemma especially where positive history is not available. One of the reasons to miss the diagnosis may be the lack of awareness of the existence of the disease in endemic areas. Authors strongly recommend to ask for positive history in all the cases of PUO.

Vehicle of transmission of brucellosis was consumption of raw milk and its products in our cases. This is the commonest root of infection as mentioned by others.^{1,3,5} This is fuelled by old belief in the endemic areas, that raw milk has more nutritive value than boiled one.⁵

Belgaum being an endemic area, surrounded with rural area having farmers as a major population. As a hospital policy, we screen all the samples which are submitted for serological tests. Slide test for Brucellosis is very sensitive, specific test (which detects most of the biotypes) and is an easy and cheap procedure to screen large number of samples. Even though cultivation of these organisms is difficult, isolation rate

is less and may end up as a futile exercise. We have successfully isolated *Br.mellitensis* from all the three cases. No relapse was seen in our study as mentioned by Mantur et.al.⁵

In conclusion, Brucellosis in children is an important cause of pyrexia of unknown origin in endemic areas like Belgaum. Therefore we recommend in such areas routine screening for brucellosis should be included along with febrile tests, even though history of the animal contact is not available.

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