Case series of Brucellosis from a tertiary care hospital of North Karnataka

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Abstract

Background: Brucellosis is a zoonosis with worldwide distribution, which is particularly endemic in many countries of the Mediterranean basin. We studied 10 cases of brucellosis with various presentations.

Methods: A total of 10 cases with brucellosis were included in the study. History and clinical examination, laboratory parameters were noted. Also the clinical outcomes and complications were determined.

Results: Majority of patients were from rural areas (8 out of 10). There were 6 males and 4 females. The age distribution was between 16-35 years. Direct contact was found to be significantly most important predisposing risk factor. Fever and joint pains were the main presenting symptoms. Low hemoglobin (7 cases), relative lymphocytosis (5 cases), low platelet (3 cases), raised creatinine (4 cases) and altered liver function (5 cases) were observed.

Conclusion: Brucellosis is an important emerging zoonotic disease but it is often under-diagnosed due to lack of suspicion and diagnostic facilities despite the fact that cattle farming (an important high risk group) is one of the main occupations in rural area. This report should infuse the awareness about this reemerging disease.

Keywords: Brucellosis, lymphocytosis, thrombocytopenia, North Karnataka

Introduction

Brucellosis is an important zoonotic problem. It accounts for a loss of about 30 million man days per year.[1] The exact magnitude of this problem is not known because of paucity of reports which too are based on retrospective serological surveys with little attempt at clinical correlation.[2] Although in the last decade, there have been isolated case reports of different clinical presentation from every part of country [3-10] but the burden of the disease seems to be more severe because of unawareness about the disease by health care providers. The disease has great public health significance because of serious diminution of man power. Animals, which congregate in herds, are the usual reservoir of the disease. In the natural course of the disease, man is affected as a terminal host and herding plays an important role in transmission. Direct or indirect contact with infected animals is crucial in the spread of the disease to humans. [11,12]

Cattle farming, unhygienic handling of infected animals and habit of consuming raw milk, which are important features associated with disease transmission, is commonly seen amongst them. In earlier studies, they have reported patients of brucellosis presenting with varying symptomatology.[6-10] The patients of brucellosis usually present with pyrexia associated with backache and joint pains and a high degree of suspicion about the disease is essential for the diagnosis. We report our observation to infuse the awareness about this emerging infectious disease because an early suspicion and adequate management can reduce the morbidity and mortality to a great extent.

Materials and Methods

We present here a series of 10 cases which were carried out at tertiary care hospital during a period of one year (June 2012 to May 2013). These cases were detected from the hospital admissions as well as from the survey carried out in the community around the residence of index cases. The details of history and clinical profile of all the cases were noted. Attention was given to the history related to the occupation and exposure to the known predisposing factors and presentation of the disease. Other causes of recurrent pyrexia and joint pain were excluded by appropriate investigations (Blood for TC, Hb, ESR, ASO titer, blood film for malarial parasite, Widal test, RA factor, liver function test, renal function test, complete urine examination, chest X ray). Brucellosis was diagnosed by the presence of antibodies against brucella > 1:160 the standard tube agglutination test and/or by isolation of brucella from blood in addition to clinical symptoms consistent with brucellosis. In patients having neurological manifestations, CSF examination and CT scan of head were also done. Echocardiography was done in patients having suspicion of cardiac lesion. Serum antibody titers were repeated after 6-8 weeks and asymptomatic patients with an antibody titer ≤ 1:80were considered as cured. The treatment period was extended to next 4 weeks in all symptomatic patients.
Results

Majority of patients were from rural areas (8 out of 10). There were 6 males and 4 females. The age distribution was between 16-35 years. Direct contact (Occupational contact with animals in field, handling animals, engaged in parturition of animals) is found to be significantly most important predisposing risk factor than indirect causes like Ingestion of raw milk, raw meat, and laboratory personnel.

Fever and joint pains were the main presenting symptoms. 8 patients (80%) presented with fever, 3 with high grade and 5 with low grade. 2 cases had fever of less than 7 days, 5 had it for 7-30 days and 1 had it for more than 30 days. Joint pain was reported by 7 cases and majority of them were having multiple joint pains. 4 cases complained of backache. Other symptoms were generalized body ache (70%), anorexia (50%), headache (50%), weight loss (20%), pain in abdomen (20%), dry cough (20%), sore throat (20%), and altered sensorium (10%).

Laboratory characteristics of these patients were as follows: Low hemoglobin was seen in 7 cases, relative lymphocytosis seen in 5 cases, low platelet count less than 1 lakh cells was observed in 3 cases but these patients did not manifest with any bleeding tendency. Renal function was altered in the form of raised creatinine in 4 cases and altered liver function was observed in 5 cases. 2 patients had co-morbid illness with diabetes and hypertension. There was no mortality in our case series.

Discussion

There is high prevalence of brucellosis in animals [15,16] and adequate factors for transmission in human beings but it has not been reported commonly in humans because of unawareness on the part of the healthcare providers due to lack of suspicion and lack of diagnostic facilities. Many of the patients with prolonged pyrexia are empirically treated with antitubercular therapy.

This case series has been presented to create awareness regarding the disease in specific clinical situation, particularly in the persons belonging to high risk category for brucellosis and to look at various clinical manifestations.

This study was conducted between June 2012 to May 2013 and during this period we diagnosed. Although the exact incidence and prevalence of the disease cannot be measured by hospital based clinical study, but the magnitude of problems seems to be alarming in certain areas and occupation from where these patients were coming. The diagnosis of brucellosis was based on demonstrating antibodies in significantly high titer (≥1:320) against brucella antigen. [11-14] Although the gold standard test for the diagnosis is isolation of specific bacteria but in the majority of epidemiological studies for brucellosis all over the world an antibody titre of ≥1:320 was always regarded as an important diagnostic criteria. [1-10]

Male preponderance (60%) in our study was probably because of constant close contact with animals while taking the herds to the fields and handling of infected products. The milk obtained from infected animals is heavily infected with the organism. The commonest presenting symptom was fever and multiple joint pains.

The important complications observed in this study were neurobrucellosis (1 case), pulmonary involvement (1 case). All cases received doxycycline 100mg twice daily, rifampicin 900mg daily for 6-8 weeks. The patient of neurobrucellosis also received streptomycin 1 gm per day for initial 14 days. All patients showed good recovery. The therapy was extended for 4 weeks to record the drop in antibody titer.

Conclusion

Brucellosis poses great diagnostic challenges to clinicians, due to its uncommon presentations and the low index of suspicion of clinicians. Exposure history is important to help clinicians to diagnose brucellosis. Additional clues include normal white cell count, relative lymphocytosis, mild anemia, and elevated C-reactive protein and liver enzymes. In patients with features suggestive of chronic inflammatory processes, in particular, spondylitis or sacroiliitis, brucellosis should be included in the list of differential diagnoses, even in the absence of fever. Serum should be sent for Brucella antibody and blood sent for culture. Given the fact that blood culture is only fairly sensitive, many cases may be undiagnosed, resulting in unnecessary morbidity and complications. Thus, in this hospital-based observational study we observed that the brucellosis is an important reemerging zoonotic disease.
References


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Table: clinical characteristics of patients with Brucellosis