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Pediatrics

NON INVASIVE MANAGEMENT OF A CHILD WITH MULTIPLE SPLENIC ABSCESSES DUE TO BRUCELLOSIS IN NORTH INDIA

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ABSTRACT **Background:** Brucellosis caused by organism of the genus Brucella. It is a multisystem disease, known for complications as it has wide spectrum of clinical variations. Splenic abscess is a serious complication, more so of chronic Brucellosis. There are very few reported cases of Splenic abscess and in Pediatric population only 3 cases have been reported so far. (2,5,6)
Case characteristics: A case of multiple large splenic abscesses due to Brucellosis.
Treatment: Treated with Oral medications for 6 weeks. She became asymptomatic on third day of treatment and resolution of abscess on repeat Ultrasound done after 1 month of treatment.
Message: Splenic abscesses is a rare and serious complication of Brucellosis and can be treated non invasively.

KEYWORDS : splenic abscess, brucellosis, Child

Introduction: Human brucellosis, a zoonosis, is caused by organism of the genus Brucella and is a major public health problem worldwide. (1) It is a multisystem disease and is known for its complications as it has a wide spectrum of clinical manifestations. Splenic abscess is a rare but serious complication of brucellosis, more so of chronic brucellosis. There are very few reported cases of Splenic abscess and in Pediatric population only 3 cases have been reported so far. (2,5,6) We report a case of multiple large splenic abscesses in a 10 year old previously healthy girl due to *Brucellosis who* was treated non invasively with a combination of Oral Doxycycline and Rifampicin for 6 weeks. She became asymptomatic on third day of treatment and resolution of abscess on repeat Ultrasound done after 1 month of treatment.

Case Report

A previously healthy 10 year old girl, resident of Chandigarh, India (consent has been taken from the patient for publication), presented with fever of 15 days duration with occasional vomiting and pain abdomen. She had history of joint pain during the start of illness. She also gave history of consumption of unpasteurized milk. On presentation she was febrile (104 deg Farenheit), pulse rate of 138/min, respiratory rate of 28 /min, Blood pressure of 126/74 mmHg. Physical examination revealed pallor, significant cervical and inguinal lymphadenopathy and hepatosplenomegaly. Before coming to our hospital she was admitted at Primary health care facility where the initial tests done showed Typhi Dot IgM positive and she was treated for Enteric fever with parenteral Ceftriaxone in adequate doses for 10 days without improvement in symptoms.

Investigations done at our hospital revealed Hemoglobin – 7.4gm/dl, total leucocyte count – 7300/mm3 with neutrophils 68, lymphocytes 29, monocytes 2, eosinophils 1, Platelet count– 3,60,000/mm3. Serum electrolytes, renal function test, liver function test normal. Urine routine and microscopy, blood culture, widal test, HIV serology, malaria Antigen and Mantoux test were negative. Keeping the possibility of Enteric fever, pending laboratory results, she was empirically started on parenteral Meropenem but her fever spikes persisted. Abdominal Ultrasonography done confirmed hepatomegaly and spleen was studded with multiple, around 12 small hypo echoic lesions of variable sizes, largest one measuring approximately 1*1 cm s/o Abscesses. Brucella Antibody (B. Abortus and B. Melitensis) screen was sent which was weakly positive (1:80) for Brucella melitensis Antibody and subsequently child was started on combination therapy with Oral Rifampin (20mg/kg/day) and Doxycycline (2mg/kg/day) and her fever subsided on third day of treatment and she was discharged with treatment for 6 weeks. Serial testing and culture was not done for the patient due to financial constraint. Clinically she improved after the start of treatment. On follow up at 1 month after treatment she was asymptomatic and her lymphnodes, liver and spleen had regressed to normal. Ultrasound was normal at 1 month.

Figure 1.USG of the spleen showing multiple splenic abscesses

Discussion

Human Brucellosis is caused by organisms of genus Brucella and humans acquire it from direct contact with or consumption of products of infected animal, unpasturised milk products being most common. Though rare in developed countries, it is prevalent in Mediterranean basin, Persian Gulf, Indian subcontinent and parts of Mexico and Central and South America. Brucellosis is a systemic disease and symptoms may appear after 2 – 4 weeks of inoculation. The route of infection includes inoculation through cuts or abrasions in skin, inoculation of the conjunctival sac of the eye, inhalation of infectious aerosols, or ingestion of contaminated meat or dairy products.(1) The infective dose of organism is as low as 10 – 100 organisms to cause infection/disease. The triad of arthritis/arthralgia, fever and hepatosplenomegaly can be demonstrated in most patients.(1) Other symptoms of Brucellosis are – night sweats, rigors, myalgia, arthralgia, low backache, anorexia, malaise, fatigue, weakness, weight loss, headache, dizziness, depressed mood, dyspepsia, nausea, vomiting, abdominal pain, cough, dyspnea, hemoptesis, testicular pain and burning micturation. Physical Examination may reveal – swelling of joints, tenderness over joints and lower back, hepatomegaly, splenomegaly, external lymphadenopathy, jaundice, mouth ulceration, scrotal swelling and a variety of cutaneous eruptions(3). As the clinical presentation is very vast the index of suspicion should be there. Splenic abscess is a very rare manifestation of Brucellosis specially in children and only three case reports have been reported (2,5,6). Mortality of Brucellosis is very high without treatment and if timely diagnosis is made the prognosis is very good. A high index of suspicion should be kept in patients with presence of risk factors and a definitive diagnosis is made by recovering the organism from the blood, bone marrow or other tissues. In the absence of culture, various serological tests can be used. Treatment is the combination therapy with 2 or more drugs for the minimum of 6 weeks.(1)

Reported cases of Splenic Abscess due to Brucellosis in Children

Case number	Patients age/sex	Place of Residence	Risk factor	Brucella antibody	Isolate	Therapy	outcome
1(2)	8year/male	Karnataka, India	Consumption of raw goats milk	1:640	B. melitensis	Doxycycline *6 weeks, Inj Streptomycin *2 weeks	Recovered

2(5)	3 year/male	Mexico	Unknown	1:1280	B. melitensis	Percutaneous drainage of liver abscess and Rifampin and TMP-SMZ * 2months	Recovered
4(PR)	10 years/female	Chandigarh, India	Consumption of unpasteurised milk	1:80	Not done	Rifampin and Doxycycline * 6 weeks	Recovered

In the previous case report by Parande et al (2), the review of the previous case reports of pediatric and adult patients, the treatment had been splenectomy or percutanoeus drainage various combinations of drugs. In our patient we had treated with oral drugs doxycycline and rifampicin which may be the better and non invasive treatment option for Splenic abscess in Brucellosis.

Conclusion

Brucellosis is the infectious disease with varied presentations and splenic abscess is one rare presentation. For brucellosis high index of suspicion should be kept in a child with prolonged fever and presence of risk factors. Investigation should be done with repeated serological tests, Ultrasound abdomen should be done to rule out abscess and treatment started early. Splenic abscess can be treated non invasively with complete recovery.

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