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Leptospiral Pneumonia and Septic Shock: A Case Report.

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ABSTRACT

Leptospirosis is a zoonotic disease caused by a spirochete bacterium. This infectious disease commonly occurs in the tropical countries but the distribution is worldwide. Here we present a four year old boy with Leptospirosis manifesting as leptospiral pneumonia and septic shock. Leptospirosis causing pneumonia is rare. Hence we are reporting this case.

Keywords: leptospirosis, pneumonia, thrombocytopenia, septic shock.

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CASE REPORT

A four year old boy was admitted in our department with a history of high grade fever and malaise for 14 days, cough, inability to take feeds and vomiting for three days and myalgia and headache for two days and no urine output for twelve hours. On examination the child was lethargic, febrile (temperature - 102^0 F) with peri-orbital puffiness and pedal edema. He had maculopapular rashes all over the body. He had t*achypnea and tachycardia.* His pulse volume was low, extremities were cold, capillary refill time was delayed > 4 seconds and his BP was 90/60 mm Hg. Liver was enlarged 4 cm below the right costal margin. Since the child was in shock he was given two fluid boluses with normal saline. After the fluid boluses, his perfusion improved and he voided urine. Blood investigations were sent and Injection Ceftriaxone and Amikacin were started. Investigations revealed the following: Capillary blood sugar (CBG) was normal. The total WBC count was 2,530 cell/cu mm and platelet count was 40,000/cu mm. Peripheral smear study showed neutropenia and thrombocytopenia. No blood parasites were seen in the smear examination. Mantoux test was negative. Chest x-ray showed linear/sub segmental consolidation involving the anterior segment of right upper lobe (Figure1). Ultrasound of the abdomen showed mild hepatomegaly and splenomegaly. Urine routine was normal. Liver function tests were normal. Blood urea and creatinine were normal. Serum Na^+, K^+ & Cl^- were normal, Bicarbonate low and the child had mild metabolic acidosis. Blood widal was negative. There was no growth in the blood culture. Scrub typhus IgM was negative. The diagnosis of leptospirosis was confirmed by a positive immunoglobulin IgM antibody ELISA test. *Leptospira IgM was 12.73 Units (>11 Units is positive).*This test detects antibodies to about 250 pathogenic serovars of the leptospira species L. Interrogans. Since the child had leptospirosis ophthalmologist consultation was obtained, and the examination showed no evidence of uveitis. The child continued to have high spiky fever for the next three days and then the fever gradually settled. Since the child clinically responded we continued with the same antibiotics. He was able to tolerate oral feeds after 3 to 4 days. The antibiotics were given for a period of 10 days. Child was well and was discharged after ten days. Repeat chest X - ray done after 2 weeks showed resolution of the consolidation (Figure 2).

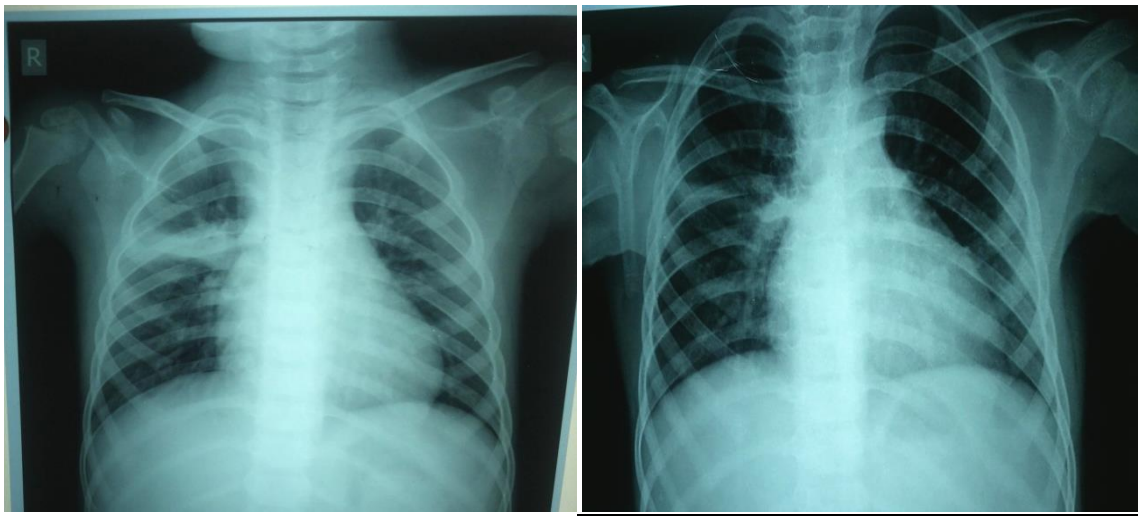

Figure 1: **X-ray showing consolidation right upper lobe. Figure 2: X-ray showing resolution of consolidation**

DISCUSSION

Leptospirosis is caused by the spirochetes of the genus Leptospira. The pathogenic leptospirosis is caused by a single species Leptospira interrogans, which includes more than 200 serovars [1]. The clinical manifestation of Leptospirosis, varies from asymptomatic infection to severe disease with multisystem involvement and death. Anicteric Leptospirosis is more common than icteric leptospiros and is seen in>90% of the cases [1]. Severe leptospirosis rarely presents with primary pulmonary manifestations, without any associated hepatic or renal involvement [2]. Pneumonia is a rare clinical manifestation of the illness [3]. It has been reported that a few children with leptospirosis present with shock [4]. The skin manifestations include transient urticarial, macular or maculopapular, erythematous or purpuric skin rash [5]. Children with leptopirosis usually have a near normal platelet count [6]. Thrombocytopenia is an uncommon finding in

Leptospirosis. The diagnosis of leptospirosis was confirmed by a positive enzyme-linked immunosorbent assay (ELISA) test [7]. Ig M antibodies to Leptospira are present from the 3rd day of infection and may persist up to 5 months after infection. Thus our patient had many rare combinations of clinical findings mimicking other illness.

Children with moderate to severe leptospirosis are treated with intravenous antibiotic therapy. Benzyl penicillin is recommended as the first-line treatment, with Ceftriaxone, Cefotaxime, Ampicillin as alternative first-line antibiotics. Studies have shown that Ceftriaxone may be a reasonable alternative in severe leptospirosis as an efficient, convenient and safe treatment regimen [8]. Our patient had many rare combinations of clinical findings for leptospirosis. Hence we are reporting this case so that an early diagnosis and prompt treatment can be made to reduce the high morbidity and mortality associated with severe Leptospirosis.

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