



# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## Leptospirosis Complicated By Cerebral Edema and Hypotension in a 13 Year Old Boy

Jegan Devi, Chandrasekaran Venkatesh, Nanda Chhavi, Dhandapani Gunasekaran, and  
Palanisamy Soundararajan

Department of Pediatrics, Mahatma Gandhi Medical College & Research Institute, Pillaiyarkuppam, Puducherry-  
607402.

### ABSTRACT

Leptospirosis presenting with features of raised intracranial tension and shock is quite unusual and a challenging situation. This report deals with the management of a thirteen year old boy who presented to us with such a presentation.

**Keywords:** leptospirosis, respiratory distress, hypotension

*\*Corresponding author*



## CASE REPORT

A 13-year-old boy presented with fever, cough and myalgia of four days duration and difficulty in breathing along with intense retro-bulbar pain, headache, chest pain and abdominal pain of one day duration. Examination revealed a febrile, sick looking and anxious boy with bilateral anterior cervical lymph nodes measuring 1x1 cm, apical and posterior group of axillary lymph nodes on the left measuring 2x1 cm, discrete, non tender and not matted. His pulse rate was 84/min and blood pressure was 80/60 mm of Hg in the right upper limb (the 50<sup>th</sup> and 5<sup>th</sup> percentile of systolic blood pressure for his age are 116 mm of Hg and 96 mm of Hg respectively). Breath sounds were decreased in the left infra-axillary and lower interscapular regions with occasional wheeze. Fundus showed early papilledema.

Investigations revealed a total leukocyte count of 4300 cells/cumm with a normal differential count and a platelet count of 90,000 cells/cumm. His serum creatinine phosphokinase was elevated. The chest radiograph, computerized tomography of brain and renal function tests were normal. Anti dengue IgM done on day five and day eight were negative; Serum Leptospira IgM (also repeated twice) was strongly positive and was taken as reflective of disease considering the clinical features and endemicity (dark ground microscopy and micro slide agglutination test were not available in our hospital).

He was treated with oxygen, fluid resuscitation with two normal saline boluses followed by maintenance at the rate of 70 ml/hour. Head elevation to 30 degree, hypertonic saline bolus and injection dexamethasone were employed to tackle cerebral edema. His vitals stabilized within 48 hours following which intravenous fluid was tapered and stopped. Papilledema resolved at the end of one week. The boy improved with doxycycline and was discharged after twelve days of hospitalization.

Leptospirosis is an endemic disease in South India [1]. Outbreaks have also happened in Mumbai especially after monsoon rains [2]. Its presentation is varied ranging from a mild flu-like illness to a severe and fulminant disease resulting in multiorgan failure and death [3]. The disease is manifested as two phases, the septicemia phase, with myalgia, intense headache with high fever, retro- orbital pain, lymphadenopathy and hepato-splenomegaly followed by the immune phase, which is mediated by the leptospira antibodies [4].

Leptospirosis presenting as shock without features of capillary leak is unusual. Though this child had features which suggested a dengue- like illness, the absence of hemorrhagic manifestations and capillary leak made it look unlikely. Respiratory symptoms are known to occur and acute respiratory distress can be associated with a high mortality [5]. The breathlessness in this boy could be due to direct local effect of organism on the lung or due to an allergic response to it.

Leptospirosis should be entertained as one of the differential diagnosis in any child presenting with respiratory distress and shock. Careful hemodynamic monitoring and early treatment is likely to lessen the severity and complications of this disease.



**REFERENCES**

- [1] Tullu MS, Karande S. Indian J Med Sci 2009; 63:368-78.
- [2] Karande S, Bhatt M, Kelkar A, Kulkani M, De A, Varaiya A. Arch Dis Child 2003; 88:1070-5.
- [3] Romero EC, da Motta Bernardo CC, Yasuda PH. Rev Inst Med Trop S Paulo 2003; 45:245-8.
- [4] Feigin RD. Leptospirosis. In: Feigin RD, Cherry JD, Demmler GJ, Kaplan SL, editors. Textbook of pediatric infectious diseases. 5<sup>th</sup> ed. Vol. 2. Philadelphia, Pennsylvania (USA): Saunders (Elsevier): 2004. p. 1708-22.
- [5] Bharty AR, Nally JE, Ricaldi JN, Matthias MA, Diaz MM, Lovett MA, et al. Lancet Infect Dis 2003; 3: 757-71.