



Pleural effusion in Dengue fever: a case report

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ABSTRACT

Dengue fever is known to cause a lot of respiratory problems. We here report a case of dengue fever with right sided pleural effusion. The fluid was exudative in nature. The patient responded to conservative management and the effusion resolved on its own. Relevant literature is also reviewed.

INTRODUCTION

Dengue fever is a common arthropod borne viral disease in tropical countries. This can have a lot of systemic features [1]. Respiratory system affection in dengue can be serious co morbidity and may cause prolonged hospitalisation. In some studies, dengue virus has been isolated from respiratory tract also. Pulmonary complications of dengue include pneumonitis, pulmonary haemorrhage, ARDS and rarely, acute respiratory failure. Also, the immunosuppression in dengue fever often predisposes to other infections of the respiratory tract. However, the respiratory involvements in Dengue are often neglected. We here report a case of pleural effusion due to Dengue. The relevant literature regarding pleural effusion in dengue is also reviewed at length.

THE CASE REPORT

A 33 year old male labourer presented with high grade continuous fever for seven days along with mild cough. He had no rash or body ache. There were no bleeding manifestations and no altered consciousness. On examination, he had no lymphadenopathy or organomegaly. There was no neck rigidity. Examinations of cardiovascular and respiratory systems were normal. There was no skin change and no evidence of arthritis.

The patient had been investigated outside before admission, but all the reports were normal. On third day of this fever, a dengue IgM test was found to be negative.

After admission, the laboratory test revealed hemoglobin of 11.6 gm/dl with total leukocyte count of 9100/cmm (neutrophil

72%, lymphocyte 25%). Platelet count was 1.35 lakh/cmm. Liver function tests were normal and fasting blood sugar was 105 mg/dl. Serum urea and creatinine were found to be 45 and 1.7 mg/dl respectively. Malaria antigens were negative. Serum chikungunya and Leptospira IgM antibodies also came negative. Chest X Ray and ultrasonography study of abdomen at admission were also normal.

The patient was treated symptomatically for fever. However, there were daily spikes of temperature to about 104 ° F. Blood cultures were sent and repeat Dengue IgM came positive in high titres. There were no bleeding manifestations still.

However, from the fourth day of admission, the patient developed a persistent dry cough. It was present at all times and increased by lying down. There was mild right sided chest pain. Examination revealed decreased breath sound and vocal fremitus on right base of lung. Chest X ray done at this time showed moderate pleural effusion (figure 1). Pleural fluid study showed a slightly turbid fluid with glucose of 97 mg/dl (concurrent serum glucose 106 mg/dl), protein 2.2 gm/dl and LDH levels of 366 IU/L (Serum LDH: 252 IU/L). The fluid adenosine deaminase level was 27.2 IU/L (N<30). Total cell count was 1100/cmm with 75% lymphocytes. ZN and gram stains were negative. Bronchoscopic lavage did not reveal any acid fast bacilli and Mantoux test was also normal (3 mm). Blood oxygen saturations remained normal and there was no wheezing. Blood anti-nuclear factor, rheumatoid factor and anti neutrophilic cytoplasmic antibody (ANCA) were also negative.

The patient was kept under observation and his fever slowly

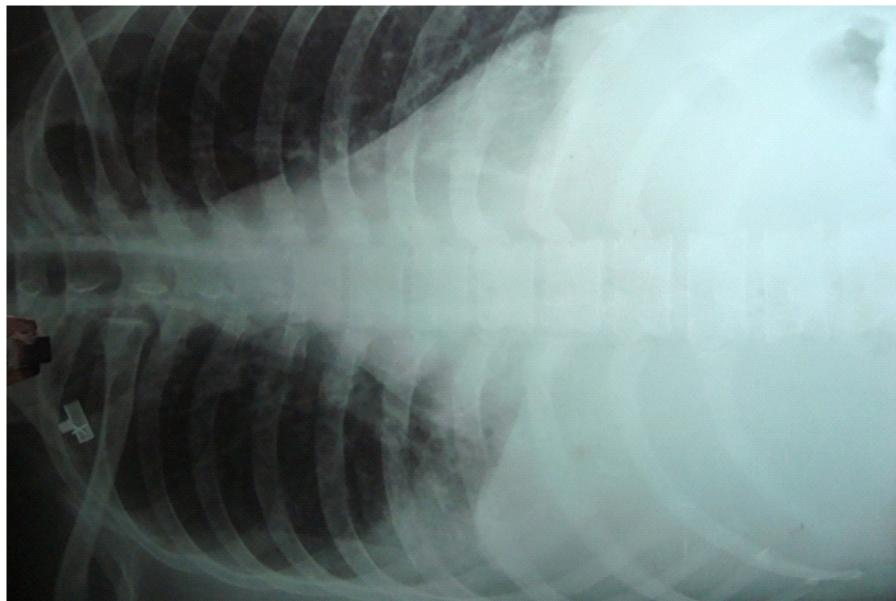


Fig. 1. Figure showing the right sided pleural effusion in our patient

resolved. No special treatment was done for his pleural effusion. His cough also resolved. At two weeks following resolution of fever, repeat chest X Ray revealed complete resolution of the effusion. The blood urea and creatinine were also normalized by then and the platelet count increased to 3.7 lakhs/cmm. Also, the blood culture report available at this time showed no growth.

This was thus diagnosed as a case of pleural effusion secondary to dengue fever.

DISCUSSION

Dengue infection is known to cause a variety of respiratory pathologies. In a study from Ghaziabad, India, they have found about 30% of dengue cases with unilateral pleural effusion and 11.2% of the cases with bilateral effusion [2]. Ascites and pericardial effusions were also reported in this study [2]. Thus, polyserositis is a known complication of dengue fever and may be even used as a sensitive marker in endemic areas.

In a study from Kolkata, the authors have found pleural effusion in 19% cases of Dengue fever. However, in all the cases, the effusion resolved on its own [3]. Pleural effusion in Dengue is thought to be a manifestation of plasma leakage and may be found by sonographic studies as early as the third day of fever [4]. In severe cases, hemoconcentration may be found as a result of this leakage [4]. However, our patient had normal haematocrit.

The nature of the pleural fluid in dengue hemorrhagic fever varies and is not diagnostic [5]. It is mostly exudative and often resembles Hantavirus induced pleural effusion [5]. High levels of IL-8 are found in the fluid. However, this was not done in our case due to financial reasons.

CONCLUSION

Usually, the pleural effusion in dengue resolves on its own. However, in developing country like India, we should always try to rule out secondary infections like tuberculosis.

The purpose of this case presentation is to sensitize the clinicians to this comparatively rare presentation of dengue and to highlight the need for imaging studies in these cases.

REFERENCES

1. Kumar A, Rao CR, Pandit V, Shetty S, Bammigatti C, Samarasinghe CM. Clinical manifestations and trend of dengue cases admitted in a tertiary care hospital, udupi district, karnataka. *Indian J Community Med.* 2010;35:386-90
2. Motla M, Manaktala S, Gupta V, Aggarwal M, Bhoi SK, Aggarwal P, Goel A. Sonographic evidence of ascites, pleura-pericardial effusion and gallbladder wall edema for dengue fever. *Prehosp Disaster Med.* 2011;26:335-41
3. Mandal SK, Ganguly J, Sil K, Chatterjee S, Chatterjee K, Sarkar P et al. Clinical profiles of dengue fever in a teaching hospital of eastern india. *National Journal of Medical Research* 2013;3: 173-6
4. Srikiatkachorn A, Krautrachue A, Ratanaparakarn W, Wongtapradit L, Nithipanya N, Kalayanaroj S et al. Natural history of plasma leakage in dengue hemorrhagic fever: a serial ultrasonographic study. *Pediatr Infect Dis J.* 2007;26:283-90
5. Pleural Effusion due to Acquired Immunodeficiency Syndrome, other Viruses, Mycoplasma Pneumoniae and Rickettsiae. In Light RW. *Pleural Diseases.* Lipincott, Williams and Wilkins; Philadelphia 2007, 5th Ed. Pp 241