

A Rare Case Report of Dengue Fever with Massive Hemothorax

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ABSTRACT

20 year young male patient presented with complaints of high grade fever and non productive cough since 10 days, chest radiograph showing right sided massive pleural effusion, blood investigations revealing severe thrombocytopenia with reactive dengue NS 1 antigen. On further evaluation with diagnostic thoracocentesis, pleural fluid is hemorrhagic which is consistent with blood, patient is treated with tube thoracostomy and other supportive treatment, patient is improved clinically and discharged home. We report this case for its rarity.

Keywords: Dengue, hemorrhagic fever, hemothorax

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INTRODUCTION

Dengue fever in association with pleural effusion and ascitis is common but hemothorax is a rare manifestation and only one case reported so far.^[1] Dengue fever is caused by arbovirus from genus flavivirus. It is single stranded RNA genome surrounded by icosahedral nucleocapsid. It is transmitted by the vector *Aedes Aegypti*. All four dengue virus (Den 1, 2, 3 and 4) infections may be asymptomatic or may lead to undifferentiated fever, dengue fever (DF), or dengue haemorrhagic fever (DHF) with plasma leakage that may lead to hypovolemic shock, dengue shock syndrome (DSS).^[3]

CASE REPORT

A 20 year young male patient presented with complaints of high grade fever and non productive cough since 10 days with no other significant present history and no significant past and family history. Clinical examination

revealed a pulse rate of 108/minute; Blood Pressure 110/80mm Hg, respiratory rate 22/minute, SPO₂ -95% on room air, no significant findings noted on general examination, systemic examination of respiratory system revealed signs of right sided pleural effusion, examination of other systems was non contributory.

The routine blood investigations showed haemoglobin 8 g/dl, total leucocyte count 8100 cells/cumm, platelets 40000/cumm, ESR 10mm /1st hour. In view of severe thrombocytopenia, dengue NS1 antigen done which is reactive. Chest radiograph PA view [Figure1] revealed homogenous opacity occupying whole right hemithorax suggesting massive pleural effusion on right side with mediastinal shift to left side.

The case was further investigated with diagnostic thoracocentesis which revealed hemorrhagic pleural fluid which was dark red and consistent with venous blood. Pleural fluid analysis showed ratio of pleural to serum hematocrit more than 0.5, suggestive of hemothorax.^[2]

Pleural fluid was negative for malignant cells and acid fast bacilli and adenosine deaminase levels were within normal limits.

There was no history of trauma in our patient and PT, APTT, INR, bleeding time and clotting time were done, which were within normal limits, Mantoux was negative; so, the most common causes of hemothorax such as trauma, bleeding disorders, etc were excluded.

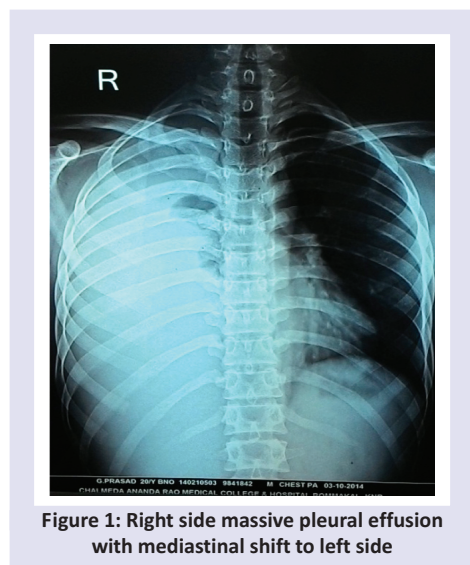


Figure 1: Right side massive pleural effusion with mediastinal shift to left side

Patient was treated with tube thoracostomy, and chest physiotherapy was done along with other supportive treatment. In view of anemia, one unit of packed cell RBC was transfused, patient improved clinically and platelet count improved, intercostal tube was extubated and patient was discharged home. On follow up after 3 weeks, patient improved clinically with no radiographic evidence of recurrence of hemothorax.



Figure 2: Chest radiograph after drainage of pleural fluid with ICD insitu

DISCUSSION

Dengue Fever is an acute febrile illness of 2-7 days duration (sometimes with two peaks) with two or more of the following manifestations: headache, retro-orbital pain, myalgia/arthralgia, rash, haemorrhagic manifestation (petechiae and positive tourniquet test) and, leukopenia.^[3] In DHF there is no vasculitis and no injury to vessel walls and plasma leakage results from cytokine mediated increase in vascular permeability. Movement of albumin causes reduction in intravascular oncotic pressure and causes further loss of fluid from intravascular compartment.

Infection with one serotype confers immunity to one serotype but not to others. Subsequent infection with new serotype results in binding of new virus to cross reactive non neutralising antibodies resulting in amplified viral replication-increased cytokines-increased vascular permeability, Signs of plasma leakage are pleural effusion, ascites, hypoproteinaemia.^[3]

Here in our case 20 year old male who presented with fever and non productive cough since 10 days, no evidence of petechiae and gastro intestinal bleed, chest radiograph showed right massive pleural effusion, physical appearance suggestive of hemothorax, with no history of trauma or bleeding tendencies.

Investigations showed dengue NS1 antigen positive with severe thrombocytopenia. Patient gradually improved with supportive management and discharged home. While bilateral pleural effusions and ascitis is common association, massive hemothorax is a rare manifestation.

CONCLUSION

A suspicion of dengue must also be borne in mind in cases of non traumatic hemothorax especially in endemic areas.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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