

## Case Report

# Peptic perforation in paediatric case of dengue: rare presentation

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### ABSTRACT

Dengue fever is a common disease in tropical and subtropical regions and is characterized by fever, headache, and joint and muscle pain. Occasionally, patients develop abdominal and gastrointestinal symptoms. Gastrointestinal manifestations are increasingly being identified in severe dengue infection. Gastric perforation is very rare manifestation in dengue infection. Here we report a case of a 12 year old female who was diagnosed with dengue fever with perforative peritonitis due to prepyloric perforation with no prior symptoms of gastric ulcer.

**Keywords:** Dengue fever, Gastrointestinal symptoms, Headache, Perforation

### INTRODUCTION

Dengue is a common viral infectious disease caused by *Flavivirus*, which is transmitted to the man by infected mosquito, *Aedes aegypti* in tropical and subtropical regions of the world.<sup>1,2</sup> Dengue is the most common and widespread arthropodborne viral infection in the world today and is caused by a *Flavivirus* spread by the *Aedes aegypti* mosquito. As the spread of dengue and dengue haemorrhagic fever is increasing, atypical manifestations are also on the rise, although they may be under reported because of lack of awareness. Gastrointestinal manifestations of dengue, once considered atypical and uncommon, are being increasingly identified and reported due to frequent occurrence of its epidemics globally. These gastrointestinal manifestations include hepatitis, acute pancreatitis, acute acalculus cholecystitis, non-specific peritonitis, febrile diarrhoea and rarely acute appendicitis.<sup>3</sup>

### CASE REPORT

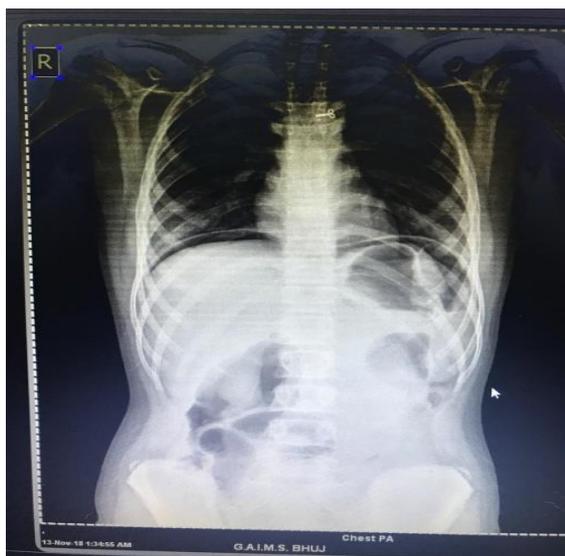
A 12 year old female came in casualty with complaints of fever with chills and arthralgia and weakness since 5 days. She also had complaint of generalised abdominal pain with multiple episodes of vomiting since 1 day.

Patient had no history of intake of NSAIDS and steroid and acid peptic disease in the past. She had no history of any co morbidity or previous surgery.

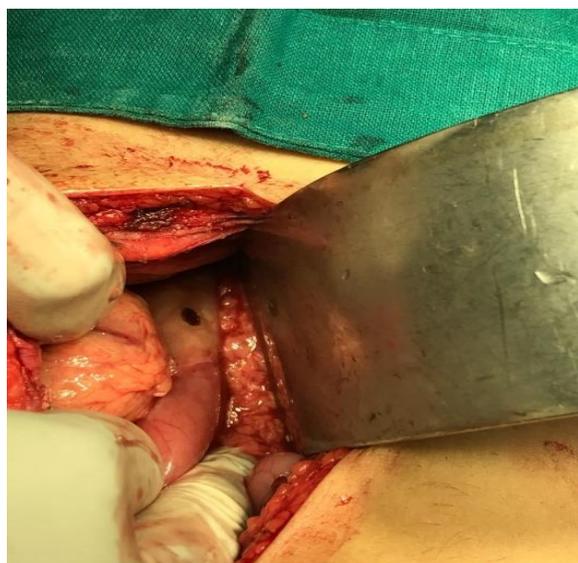
On examination patient was febrile (101 F), pulse rate was 110/min and blood pressure was 110/70 mmHg. On systemic examination, her abdomen was tense, generalized tenderness, guarding and rigidity and bowel sounds were sluggish.

The initial full blood count showed haemoglobin 12 gm/dl, total leukocyte count 4950/cumm and platelet count was 45000/cumm. The dengue nonstructural protein 1 antigen was positive. Her urea and creatinine was normal. Her coagulation profile and LFT was normal. X-ray chest showed bilateral free gas under both domes of diaphragm which was suggestive of pneumoperitoneum (Figure 1).

Patient was taken up for emergency exploratory laparotomy. A midline exploratory laparotomy was performed and prepyloric perforation diagnosed intraoperatively. The perforated site was repaired with Graham's omentoplasty.



**Figure 1: X-ray chest showing bilateral free gas under diaphragm.**



**Figure 2: Gastric perforation intra-operatively.**

## DISCUSSION

In India, epidemics of dengue are becoming more frequent.<sup>4</sup> Infact, dengue fever and dengue hemorrhagic fever are increasingly important public health problems in both tropical and subtropical region. Around 2.5 billion people live in areas where dengue is endemic. Gastrointestinal manifestation of dengue are increasingly being identified and reported, such as hepatitis, fulminant hepatic failure, acalculouscholecystitis, acute pancreatitis, acute parotitis and febrile diarrhoea. The gastrointestinal manifestations of dengue are not rare and should not be overlooked. Commonly, dengue presents as an acute febrile illness, musculoskeletal pain, nausea, vomiting and petechial rash or as severe disease dengue haemorrhagic fever and dengue shock syndrome in one-third of cases.<sup>5,6</sup> However, due to frequent emergence in

outbreaks of dengue globally, there has been more and more appearance of atypical manifestations of dengue such as neurological, abdominal and gastrointestinal, cardiac, renal, musculoskeletal, renal, respiratory, musculoskeletal or lymphoreticular manifestations.<sup>7</sup> Abdominal and gastrointestinal manifestations are not uncommon but are frequently overlooked. There have also been reports of presentation of dengue as surgical emergencies such as acute pancreatitis, acute acalculous cholecystitis, acute appendicitis and perforation peritonitis due to gastric perforation, or appendicular perforation.<sup>8,11</sup>

The presence of free intraperitoneal gas on a routine radiograph usually indicates bowel perforation. An experimental study has shown that as little as 1 ml of gas can be detected below the right hemidiaphragm on properly exposed erect chest radiographs.

In this case, the initial assessment of abdomen revealed generalized tenderness and guarding and rigidity present which suspicious of pancreatitis, acalculouscholecystitis and gastrointestinal perforation which are rarely reported in dengue infection. The exact mechanism of gastrointestinal; perforation in dengue fever remains unclear as mentioned in a few previous case reports. It has been proposed that dengue virus may cause intestinal mucosal damage either by direct mucosal invasion or by release of endotoxins. Vejchapipat et al have suggested that dengue virus causes intestinal mucosal injury and intestinal mucosal ischaemia as suggested by high serum intestinal fatty acid binding protein levels, a specific marker for mucosal injury.<sup>11</sup> In some cases, this intestinal mucosal injury and intestinal mucosal ischaemia may be severe enough to cause intestinal perforation.

In a series of hollow viscus perforation, it was found that there were 2 cases of intestinal perforation and 1 case of gastric perforation, however exact site of intestinal perforation was not mentioned.

## CONCLUSION

Gastrointestinal manifestations in patients of dengue should not be missed and if diagnosed and managed timely, patient can be treated uneventfully. Dengue should be kept as a differential diagnosis in cases of peritonitis in adults as well as paediatric patients.

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