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Original Research Article

Acute acalculous cholecystitis in dengue fever patients

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ABSTRACT

Background: Dengue fever is an acute febrile illness characterized by frontal headache, retro ocular pain, muscle and joint pain, nausea, vomiting and rash. Frequent sonographic findings in a case of dengue include thickened gall bladder with pericholecystitic fluid, ascites, spleenomegaly and pleural effusion which is commonly right sided.
Methods: 540 patients of confirmed dengue fever were subjected to ultrasonography abdomen to find the incidence of acalculous cholecystitis for diagnostic and prognostic significance.
Results: Acalculous cholecystitis was detected in 210 patients (38.88%) of confirmed dengue fever. Patients developing acalculous cholecystitis recovered with conservative treatment only though the hospital stay was prolonged in these patients.
Conclusions: In dengue fever patients, acute acalculous cholecystitis is not uncommon and is usually self-limiting and resolves with conservative management only. Role of ultrasonography has a supporting role in dengue fever for prognostic and diagnostic significance.

Keywords: Acalculous cholecystitis, Dengue fever

INTRODUCTION

Dengue fever is one of the commonest arbo viral disease in this part of the world with sudden increase in number of patients in last few years. In most of the cases, it is asymptomatic or presents with features common to any viral infection. Dengue fever is usually non-specific, self-limiting, biphasic febrile illness but the presentation may range from being asymptomatic to classical dengue fever, dengue hemorrhagic fever and dengue shock syndrome.[1] Dengue fever is a mosquito borne viral disease caused by the dengue virus and is endemic in large areas of South East Asia.[2] Typically, dengue fever is an acute febrile illness characterized by frontal headache, retro ocular pain, muscle and joint pain, nausea, vomiting and rash.[3,4] Dengue virus infection manifests with wide range of severity from asymptomatic mild febrile illness to life threatening disease including hemorrhagic manifestations and severe dengue. The clinical picture of classic dengue begins with a high-grade fever, intense headache and myalgia, prostration, nausea, vomiting, arthralgia.

Various atypical manifestations of dengue virus infection have been reported including fulminant hepatitis, encephalopathy, cardiopathy, acute pancreatitis and acalculous cholecystitis.[5-7] Frequent sonographic findings in a case of dengue include thickened gall bladder with pericholecystitic fluid, ascites, splenomegaly and pleural effusion which is commonly right sided.[8-10] Some patients presented with right upper quadrant abdomen pain, fever. A thickened gall bladder wall and a positive Murphy's sign. On abdominal sonography, acute acalculous cholecystitis was diagnosed. The aim of the present study was to detect the incidence of acalculous cholecystitis in

dengue fever patients for diagnostic and prognostic significance.

METHODS

The study was conducted at Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar, Punjab, India. Patients presenting with febrile illnesses in medicine OPD were screened for dengue fever from August 2016 to December 2016. A proper clinical history was taken from all of them and thereafter they were subjected to complete general physical examination and lab investigations. Patients suspected of dengue fever(DF) on clinical assessment were tested for antibodies against dengue antigen for confirmation. Either detection of NS1 antigen (NS1 Ag), IgM antibody or serial testing with 4 fold increase in IgG antibody levels were taken as criteria for confirmation for DF.

Patients who were confirmed as dengue fever on serological testing were managed on OPD basis or were admitted in the hospital depending on the clinical status and hematological profile. Levels of aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase and total bilirubin were measured and complete blood counts were determined and were repeated, where needed. Abdominal ultrasonography was performed with real time scanner in patients with abdominal pain and abnormal results on liver biochemical test.

Patients were treated with intavenous fluids, antibiotics, antipyretics, platelet transfusion (as and where needed) with regular monitoring for development of any complication. The patients were followed till they recovered completely. The duration of recovery (clinical as well as hematological) was noted in all patients with DF.

RESULTS

Out of the 1516 patients seeking medical treatment for febrile illness in Medicine OPD during this period, 540 were confirmed dengue fever on serological testing. Out of 540 confirmed dengue patients, 263 were males and 277 were females. The age of the patients varied from 16-65 years.

Clinical findings

Fever was the most consistent presenting complaint and clinical finding, present in 528 (97.78%) patients of confirmed dengue fever. Myalgia, headache and arthralgia were also present in majority of patients (87.59%, 73.33%, and 72.22% respectively) Table 1.

Ultrasound findings

Acalculous cholecystitis was detected in 210 patients (38.88%) of confirmed dengue fever. Hepatomegaly was the most common USG finding in patients of dengue fever being present in 240(44.44%) of patients. Serositis in the form of ascites and pleural effusion was also present in a significant number of patients. Ascites was detected in 140 (25.92%) patients while pleural effusion was seen in 129 (23.88%) patients. Splenomegaly was found in 33 (6.11%) patients (Table 2). Pancreatitis was a rare clinical and USG finding seen only in 9 (1.66%) patients.

Table 1: Clinical manifestations of patients with dengue fever.

Clinical manifestation	Number (n = 540)	Percentage
Fever	528	97.78
Myalgia	473	87.59
Headache	396	73.33
Arthralgia	390	72.22
Rashes	311	57.59
Abdominal Pain	309	57.22
Vomiting	273	50.55
Dyspepsia	267	49.44

Table 2: Ultrasound findings in dengue fever.

Ultrasound findings	No. of patients (n = 540)	Percentage
Acalculous cholecystitis	210	38.88%
Hepatitis	240	44.44%
Ascites	140	25.92%
Pleural effusion	129	23.88%
Splenomegaly	33	6.11%

The mean duration of hospital stay for patients developing. Acalculous cholecystitis was 7.2 days as against 3.6 days who developed no complication. All of the patients recovered fully with conservative line of management. None of them required any surgical intervention. The study thus validates the conservative line of management for patients with acute acalculous cholecystitis in dengue fever.

DISCUSSION

Dengue infection presents with typical features such as fever, myalgia, intense headache and rashes, arthralgia, vomiting, nausea. However atypical features of dengue virus infection include hepatitis, encephalopathy, cadiomyopthy, acute pancreatitis and acalculuos cholecystitis have been reported during recent years.

Acalculous cholecystitis should be suspected in a case of DF presenting with abdominal pain, fever, a positive murphy sign, mild elevation of transaminases and a thickened gall bladder wall.

Prasad A et al and Gulati et al showed similar presentations in their studies too.[11,12] The pathognenesis

of acute acalculous cholecystitis in still unclear. Shaprio MJ et all in his studies showed that cholestasis and increased bile viscosisity, infection as the probable causes.[13] However the main cause which induces thickening of gall bladder wall is increased vascular permeability which causes plasma leakage and serous effusion with high protein content (mostly albumin).[14]

In our study, 540 patients were diagnosed with dengue. Acute acalculous cholecystitis was found in 38.88% cases which is not an uncommon atypical feature. No patient developed any complication due to acalculuos cholecystitis and all patients recovered with symptomatic treatment and no surgical intervention required.

CONCLUSION

In dengue fever patients, acute acalculous cholecystitis is not uncommon and is usually self-limiting and resolves with conservative management only and the gall bladder thickness return to normal after several days. Conservative treatment is required in the form of adequate hydration ,antipyretics and platelets transfusion in cases of severe thrombocytopenia.

Cholecystectomy is not required in cases of dengue fever complicated by acalculous cholecystitis. Role of ultrasonography has a supporting role in dengue fever. Abdominal ultrasound should be mandatory in cases of dengue fever as it helps in clinical diagnosis as well as for early detection of complications

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