Laboratory confirmation of dengue and chikungunya co-infection

H A C Hapuarachchi¹, K B A T Bandara², M D Hapugoda², S Williams³ and W Abeyewickreme¹

(Index words: dengue, chikungunya, RT-PCR)

Introduction

Dengue fever and chikungunya are arboviral diseases transmitted by Aedes mosquitoes. Unlike dengue, chikungunya typically consists of a self-limiting and non-fatal acute illness characterised by fever, rash and incapacitating arthralgia [1].

Case report

In November 2006, a 70-year old man presented with a history of high fever, severe headache and arthralgia of knees, and small joints of his hands and feet of 3 days’ duration. On examination, the patient had mild swelling of the small joints of hands. There was no skin rash, bleeding into skin or mucosal membranes. His blood analysis showed a leucopenia (WBC 3.04 x 10³ per µl) with a relative lymphocytosis (51%). The total platelet count was 115 x 10³ per µl. The haemoglobin was 14.3 g / dl with a packed cell volume of 43.8%. The first-hour erythrocyte sedimentation rate, serum alanine transaminase level and urine analysis were normal.

As it was difficult to differentiate between dengue fever and chikungunya, polymerase chain reaction (PCR) was used to confirm the aetiology. Viral RNA was extracted from serum samples using QiAmp Viral RNA Kits (Qiagen Inc., USA). Reverse transcription-PCR (RT-PCR) protocols were used to amplify dengue [2,3] and chikungunya [4] viruses respectively. RT-PCR confirmed the presence of both dengue and chikungunya viruses in the patient’s serum (figure 1).

Comment

This is the first case report of chikungunya and dengue co-infection confirmed by molecular assays in Sri Lanka. As the clinical and biochemical manifestations of this case were suggestive of both dengue fever and chikungunya, early aetiological confirmation was important as delayed diagnosis of dengue could result in fatal complications.

Laboratory confirmation of dengue and chikungunya can be made by several methods. One of the widely used methods to confirm a recent infection is detection of disease specific IgM antibodies. However, this method cannot be used for early diagnosis, as IgM does not appear in the viraemic phase (first 5 days of infection) in both dengue and chikungunya. The options available for early diagnosis of these infections are either virus isolation or RT-PCR. Of these, the more convenient and least time-consuming method is the latter.

Figure 1. Photograph showing the amplified products in a 2% agarose gel stained with ethidium bromide. Amplified products of the positive controls for dengue (225 bp) and chikungunya (354 bp) were run in parallel with the respective products of the clinical sample. bp = base pairs, M = 50 bp DNA marker, S1 = clinical sample, C+ve = chikungunya positive control, D+ve = dengue positive control and -ve = negative control.

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¹Department of Parasitology, ²Molecular Medicine Unit, and ³Department of Pathology, Faculty of Medicine, P.O. Box 6, Thalagolla Road, Ragama, Sri Lanka.
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Endoscopic management of a difficult common bile duct stone

C A H Liyanage, Y Sadakari, J Ienaga, R Tanabe, S Takahata and M Tanaka

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Introduction

Endoscopic sphincterotomy and lithotripsy using a lithotripter basket have evolved as successful methods to manage bile duct stones. Endoscopic methods reduce morbidity associated with open or laparoscopic surgery. A major deterrent to successful endoscopic management of bile duct stones is large size, especially if the diameter of the stone is greater than the basket. We report a patient who had recurrent common bile duct (CBD) and hepatic duct stones, with one stone in the CBD measuring 35 mm × 33 mm, and the endoscopic technique used to clear the CBD.

Case report

A 75-year old man, with an ASA (American Society of Anaesthesia) grading of 3, who had a history of recurrent choledocholithiasis / heptolithiasis presented with one large stone (35 mm × 33 mm) and multiple smaller stones in the CBD. He underwent endoscopic retrograde cholangiopancreatography (ERCP). The large stone was in the upper CBD at the hepatic duct confluence and there were three free floating 10 mm stones in the distal dilated segment (figure 1). After deep canulation, an Olympus BML-2q lithotripter (Olympus Optical Co. Tokyo, Japan) was advanced along a guide-wire beyond the large stone. The largest available basket (31 mm), would not accommodate the whole stone. The technique we used to break this stone was to grate the edge of the stone, which resulted in its disintegration. Thereafter the stone was partially held with the basket and piecemeal crushing was done with periodic evacuation into the duodenum. With multiple such passages it was fluoroscopically confirmed that complete clearance had been achieved (figure 2). The stone was a pigment stone that could be crushed easily. The CBD was stented with two 8.5Fr, 7cm stents to facilitate free drainage of bile, and to prevent cholangitis (figure 3). The patient made an uneventful recovery.

Figure 1. ERCP finding of large proximal CBD stone and distal small stones. (Note: the size of the scope is 1.7 cm)