**Plasmodium falciparum and hepatitis E virus co-infection in fulminant hepatic failure**

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Acute hepatitis E and falciparum malaria can each present with fulminant hepatic failure and are common in tropical countries. However, co-existence of these two conditions has not been reported. We report a 20-year-old girl who presented with fever and altered sensorium. Peripheral smear was positive for *Plasmodium falciparum*, and IgM anti-HEV was positive. She died despite antimalarial drugs and supportive management. Postmortem liver tissue showed changes suggestive of acute viral hepatitis. [Indian J Gastroenterol 2001;20:1111]

**Key words:** Acute liver failure

Falciparum malaria, endemic in India, is known to present with encephalopathy associated with liver failure. Hepatitis E virus (HEV) infection is a common cause of fulminant hepatic failure (FHF) in India. Co-existence of the two diseases may cause diagnostic and therapeutic difficulty. We report a patient with FHF with such dual infection.

A 20-year-old girl presented with moderate-grade fever and chills for six days, vomiting for three days and altered sensorium for one day. Examination revealed grade III encephalopathy, deep icterus, discrete purpuric lesions over extremities, tachycardia and tachypnoea. Liver span was 5 cm; there were no peripheral stigmata of chronic liver disease, meningeal signs, splanchnecoglycemia or oedema. Chest and cardiovascular systems were unremarkable.

**Investigations:** Hemoglobin 11.4 g/dL, total leucocyte count 5600/cu/mm, blood sugar 76 mg/dL, serum bilirubin 11.7 mg/dL (conjugated 4.2), serum total proteins 6.6 g/L (albumin 3.1), ALT 2000 u/L and AST 1560 u/L (normal <40), alkaline phosphatase 117 IU/L (normal <175), prothrombin time 41.8 (control 13.6); serum creatinine was normal. Peripheral blood smear was positive for *Plasmodium falciparum*. Serum was positive for IgM anti-HEV (Genelabs, Singapore), and negative for HBSAg and HEV RNA by reverse transcriptase-polymerase chain reaction.

The patient was treated with artecamate, intravenous ranitidine, ceftriaxone, mannitol and mechanical hyperventilation. Fever subsided on the third day but sensorium did not improve. She developed hypotension, which did not respond to inotropic drugs, and died on the sixth day. Postmortem liver necropsy revealed foci of hepatocyte necrosis, giant cells, endothelial swelling, prominent Kupffer cells, intracytoplasmic and canalicular bile stasis, widening of portal tracts due to edema, mild mononuclear cell infiltrate and lipofuscin-laden macrophages: these findings were consistent with acute viral hepatitis. Osmacin stain for HBSAg was negative.

Our patient had acute hepatitis E and malignant malaria. The diagnosis of acute hepatitis E was based on presence of anti-HEV IgM antibody. Nearly one-fourth of patients with this infection lack HEV RNA. Further, the viremia might be transient.

To the best of our knowledge, this is the first report of co-existence of these two common diseases. Necropsy did not reveal massive necrosis of liver, which is common in patients who die of FHF due to HEV alone. This suggests that falciparum malaria played a role in the causation of fulminant clinical course in our patient.

**References**


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**Laparoscopic gastropexy for chronic intermittent gastric volvulus**

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The traditional surgical treatment of chronic volvulus involves laparotomy for derotation of the stomach and its fixation to the patients. We describe a 36-year-old man with organoaxial gastric volvulus who was treated successfully with laparoscopic gastropexy. He is asymptomatic four months later. [Indian J Gastroenterol 2001;20:111-112]

**Key words:** Laparoscopy, stomach volvulus

Gastric volvulus comprises abnormal rotation of the stomach along its longitudinal (organo-axial) or transverse (mesentero-axial) axis. In nearly three-fourths of patients, the volvulus is secondary to conditions such as para-esophageal hiatus hernia, traumatic diaphragmatic hernia, evagination of the diaphragm, abdominal bands or adhesions; in the remaining patients, the volvulus is...
termed primary or idiopathic.

We report a patient with chronic intermittent gastric volvulus who underwent successful laparoscopic gastroscopy.

A 36-year-old man presented with two episodes of severe upper abdominal pain associated with retching and vomiting, requiring hospitalization on both occasions. Clinical examination was unremarkable except for upper abdominal tenderness. Hematological and biochemical profiles, plain abdominal X-ray and abdominal sonography were normal. Barium meal showed organo-axial gastric volvulus, without associated paraesophageal hernia or evagination of the diaphragm. Upper gastrointestinal endoscopy confirmed the presence of a volvulus. For these episodes, he was treated with nasogastric drainage, intravenous fluids and other supportive medications. After the second episode, he was offered laparoscopic gastroscopy as definitive surgical treatment.

Laparoscopy was performed under general endotracheal anesthesia. A carperitoneum of 12 mmHg was maintained throughout the procedure. Two 11 mm and two 5.5 mm cannulas were used for passage of telescope and other operative instruments. The hiatal region and both domes of the diaphragm were inspected to exclude paraesophageal or diafragmatic hernia. The lesser sac was entered by making an opening in the gastro-coelic omentum. The omentum was divided from the antrum to the fundus using a harmonic shears (Johnson & Johnson, Mumbai). Next, a 30 cm strand of 2/0 Ethibond (Ethicon, Mumbai) was introduced inside the abdomen through one of the ports and a seromuscular suture was placed on the anterior wall of the stomach near the fundus. The needle was cut off, retrieved and both ends of the suture were exteriorized from the abdominal wall through a 2 mm incision with the help of a port-closure device. Three other sutures were placed on the stomach — two on the anterior wall and the body and one near the antrum (Fig) — and exteriorized in a manner similar to the first one. The carperitoneum was reduced to 5 mmHg and the sutures were pulled up to approximate the anterior gastric wall to the parietes. The sutures were then tied so as to bury the knots in the subcutaneous tissue. Adequate apposition between the gastric wall and the parietes at four points was confirmed by visual inspection from within. The cannulas were removed and wounds closed. The patient was allowed to go home on the fourth postoperative day. He remains asymptomatic four months later.

In recent years, less invasive techniques are being increasingly utilized in the management of gastric volvulus. Endoscopic derotation of both acute as well as chronic gastric volvulus has given satisfactory results. However, given the high propensity for recurrence, endoscopic derotation followed by placement of single or dual percutaneous endoscopic gastrostomy (PEG) tube to fix the stomach to the anterior abdominal wall, has been used with success. However, a cause for concern is that a single PEG tube may itself initiate gastric volvulus. Although multiple PEG tubes provide fixation at several points, their placement can be technically challenging; moreover, such tubes may need prolonged care.

There have been a few previous reports describing the use of laparoscopic gastroscopy for management of acute as well as chronic gastric volvulus. Our technique incorporated certain unique steps in order to reduce the chances of recurrence. Firstly, the gastrocoelic omentum was divided from antrum to fundus, to reduce the upward pulling force and drag on the greater curvature of the stomach. Secondly, the stomach was apposed to the anterior abdominal wall at as many as four points. We believe that sutures traversing the anterior rectus sheath would provide secure anchorage.

Current experience with laparoscopic gastroscopy is limited to a handful of cases. However, laparoscopic gastroscopy performed in a manner identical to its open counterpart should provide good long-term results. And if that proves to be the case, we may well see laparoscopic gastroscopy becoming the ‘gold standard’ for the treatment of gastric volvulus.

References

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