An Unusual Presentation of Weil’s Disease

Souren Pal

Abstract
Leptospirosis is a potentially fatal disease which can cause multi-organ dysfunction. It can have different rare presentations. Acute pancreatitis is one such rare gastrointestinal manifestation which present as an acute abdomen. Simultaneous presence of features of both acute pancreatitis and acute hyponatremia in a case of Weil's disease characterised by combination of jaundice, acute kidney injury, hypotension and hemorrhagic manifestation is very rare.

Introduction
Leptospirosis, potentially fatal, re-emerging zoonotic disease globally, is caused by spirochetes of genus Leptospira. The clinical phenotype of infection includes subclinical infection, an undifferentiated febrile illness and the most serious form known as Weil’s disease characterised by variable combinations of jaundice, acute kidney injury, hypotension and hemorrhage. Pancreatitis as a secondary complication of the disease is very rare and only a few cases have been reported.

Case Report
A 57 year old male patient from rural area admitted to hospital in August with high grade continuous fever with jaundice, myalgia and redness of right eye for seven days, cough, hemoptysis, decreased urine output for three days, diffuse pain abdomen with nausea and vomiting for two days and drowsiness for last 24 hours. He was non-diabetic, nonhypertensive, non-smoker and nonalcoholic. He had no history of contact with jaundiced persons, blood transfusions and drug abuse.

On examination he had BP 80/40 mm of Hg, pulse 110/min and regular, GCS 11/15 and his sclera were icteric with subconjunctival hemorrhage (Figure 1). There was marked, rebound tenderness with guarding in his whole abdomen with sluggish peristaltic sounds. Chest was clear with bilateral vesicular breath sound except on right apical area where it was diminished. Routine blood parameters done serially are shown in the Table 1. Malaria parasite dual antigen test by immunochromatographic assay of pLDH and HRP-2, IgM Dengue in serum by MAC ELISA method, HBsAg, antiHCV, IgM anti HAV, IgM anti HEV, HIV were negative. ABG analysis was almost normal except for low oxygen saturation (85%).

Treatment was started with IV fluid along with hypertonic saline, antipyretics and moist oxygen. Considering low platelet count, four units of platelet were transfused. Chest X-ray was non-contributory. Due to high index of suspicion, serum sample for IgM Leptospira was sent. Patient regained consciousness on Day 3 after partial correction of hyponatremia but hemoptysis, icterus, pain abdomen, decreased urine output persisted. Results of IgM Leptospira came on Day 3 and it was 85.0 U/mL (Negative <15.0, Intermediate 15.0-20.0, Positive > 20.0). Injection ceftriaxone 1gm IV once daily was started. CECT Scan of abdomen, done after normalisation of urine output on day 7, showed bulky pancreas (Figure 2) hence confirmed the presence of acute pancreatitis. HRCT Scan of thorax (Figure 3) revealed focal ground glass opacity in right apical and anterior segment of upper lobe possibly of pulmonary haemorrhage. Subsequent sputum examination was negative for acid fast bacilli. So a diagnosis of acute
leptospirosis complicated by acute pancreatitis, acute renal failure, acute hyponatraemia with bleeding diathesis was confirmed.

**Pain abdomen, fever and haemoptysis** was subsided on day 10. Jaundice was gradually decreased. On day 14 patient was discharged. On first follow up 2 weeks after discharge patient was completely anicteric.

**Discussion**

Pathogenesis of organ dysfunction in leptospirosis is yet to be fully understood. It is characterised by the development of vasculitis, endothelial damage and inflammatory infiltrates composed of mononuclear cells, plasma cells, histiocytes and neutrophils.

Pancreatitis as a secondary complication of leptospirosis is very rare. Serum amylase may be raised in upto 60% of patients with renal impairment. But in our patient pancreatitis was confirmed by laboratory investigations, imaging study and absence of other common causes of pancreatitis like gall stone, alcoholism or drug intake. CT scan is a gold standard in diagnosis of acute pancreatitis and it has 100% specificity and over 90% sensitivity. Possible mechanism of acute pancreatitis are endothelial damage, inflammatory infiltration, vasculitis of small vessels with ischemic injury leading to activation of proteolytic enzymes and pancreatic auto-digestion. In previously reported fatal cases, pancreatic histopathologic results showed mainly interstitial inflammation with lymphocytic infiltrates, fat necrosis, edema, hemorrhage, congestion and rarely calcification.

Considering the abrupt presentation in a previously healthy person with fever, jaundice and body ache, raised blood urea, creatinine, liver enzymes and bilirubin, amylase and lipase level and all subsiding to normal values with medical treatment; the possibility of acute pancreatitis caused by probable leptospiral infections is to be considered in a background of high titers of Leptospiral IgM antibody.

Hepatic dysfunction in leptospirosis is due to mainly focal periportal cellular necrosis and intrahepatic cholestasis but widespread hepatocellular necrosis is not found.

**Pulmonary involvement** in leptospirosis occurs in 12% to 67% cases. The severity of pulmonary involvement is unrelated to the liver function. But abnormal radiological findings are found in more than half of patients despite the absence of respiratory symptoms.

Thrombocytopenia is a common finding in leptospirosis, occurring in 40.0-85.6% of this disease. Vasculitis, increased peripheral destruction and decreased thrombocyte production and consumption of thrombocytes have been considered as potential causes of thrombocytopenia. Lengthy disease and acute kidney injury are also the risk factors for thrombocytopenia. The patient described here had acute renal failure as well as thrombocytopenia.

Hyponatraemia occurs frequently in tropical diseases as a result of increased levels of antidiuretic hormone, entry of sodium into cells, sodium loss and resetting of osmoreceptors. Natriuresis and kaliuresis are observed in patients with leptospirosis also. Tubulointerstitial nephritis is a common clinicopathological finding in leptospirosis. Primary injury of the proximal convoluted tubule is regarded as the hallmark of the kidney in leptospirosis.

Though association of pancreatitis in acute leptospirosis is rare but still reported in various journals. But presentation of acute pancreatitis, acute hyponatremia, thrombocytopenia and haemorrhagic manifestations simultaneously in a case of acute icteric leptospirosis is extremely rare.

**Conclusion**

Leptospirosis should be considered in the differential diagnosis of acute pancreatitis with jaundice, acute renal failure and dyselectrolytemia in endemic areas. Early diagnosis and appropriate treatment is essential.
for life saving. With the variable manifestations of leptospirosis, clinicians must maintain a high index of suspicion in order to make the correct diagnosis.

References