Dear Editor

Infection with Leptospira commonly affects the liver. It has been linked to acute hepatitis, fulminant liver failure and multiorgan dysfunction. Pyogenic liver abscess in association with acute leptospirosis has not been reported to the best of our knowledge. A 10-year-old, previously healthy, female was brought to the emergency ward with complaints of high-grade fever, vomiting and pain in right upper abdomen since last seven days. There was no history of loose motions, rashes, recent travel or ingestion of any medications.

On examination, she was conscious and oriented. On clinical examination, she had pallor, icterus and was grossly dehydrated. She was febrile (104°F), visibly distressed with tachycardia (128 beats per minute), hypotensive with 60 mmHg systolic BP. Abdominal examination revealed tenderness localized to the right hypochondrium. Note was made of bilateral conjunctival suffusion.

Investigations revealed a high total leukocyte count (20,000 per microliter with 92% neutrophils), elevated liver enzymes (AST-822, ALT-1057, total serum bilirubin-4.24, indirect 3.28), CRP 89 mg/L, procalcitonin 11 ng/ml, serum urea 88 mg/dl, and creatinine 1.8 mg/dl. The picture was commensurate with severe bacterial sepsis. Routine tests for acute febrile illness with multiorgan dysfunction including tests for malarial parasite, dengue serology, and IgM typhidiot were negative. Blood culture was done at admission, which eventually did not reveal any growth. X-ray chest was normal. Urine examination did not reveal any abnormality.

Ultrasound abdomen revealed a single liver abscess in the right lobe of the liver with volume of 4.8 cc and mild splenomegaly. She was started on intravenous piperacillin and tazobactum and metronidazole, adjusted as per liver and renal functions. The abscess was drained percutaneously under ultrasound guidance without any periprocedural complications. Two days after starting the treatment, pain in the abdomen significantly improved, but the blood parameters revealed sustained derangement of the liver and renal functions. Repeat ultrasound abdomen after two days of treatment, did not reveal any increase in size of the liver abscess. In view of the worsening blood parameters, other reasons for the condition were sought. Tests for scrub typhus and Leptospira were sent. IgM Leptospira came out to be positive two days later and intravenous doxycycline was added to the treatment. The patient responded to treatment, and liver and renal functions started improving. By day 10 of the treatment, the ultrasound revealed near complete resolution of the liver abscess and normalization of all blood parameters. Contrast-enhanced CT scan of the abdomen was done after the kidney functions improved. The CT abdomen did not reveal any abnormality in the gut or the extra hepatic biliary apparatus, which could have led to the formation of the liver abscess. Tests for amoebic serology were negative. The patient was discharged after 16 days of therapy and is doing well currently.

Both liver abscess and leptospirosis are commonly encountered in tropical countries. The coexistence of the two conditions has not been reported in India, to the best of our knowledge. Gram negative enteric bacilli are the commonest causes of liver abscesses, and Leptospira has not been mentioned as an etiological agent or a predisposing condition for the development of liver abscess in the literature. In our patient, infection with Leptospira was suspected due the persistence of multiorgan dysfunction despite treatment for the liver abscess. Our patient probably developed both infections simultaneously from the community.

In the developing world, leptospirosis remains a disease of poverty (including low education, poor sanitation and housing). It is acquired generally from living in rodent-infested and overcrowded urban areas. The epidemiology of pyogenic liver abscess is similar, and it is usually a fall out of poor hygiene coupled with any structural gut/biliary tract abnormality. Acalculus cholecystitis and pancreatitis have been described with Leptospirosis in children. Leptospirosis may be complicated by renal and hepatic failure (Weil’s disease), pulmonary hemorrhage and ARDS and a multitude of neurological complications including uveitis, optic neuritis and peripheral neuropathy. Myocarditis and rhabdomyolysis have also been reported. In our country, urine tests and culture techniques for testing Leptospira are usually not available, and one has to rely on the clinical presentation, IgM antibody testing and response to therapy for making the diagnosis.

Our country remains a hot bed for tropical infections, and often, we see a single patient harboring multiple infections. An astute primary care physician should look out for alternate diagnosis in a patient, if they are not responding to the treatment given for the primary disease.

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