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CASE REPORT

A Case Report Of Leptospirosis Induced Acute Pancreatitis

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ABSTRACT

Leptospirosis may rarely present with acute pancreatitis along with classical manifestations. In this study, we report a case in which, leptospirosis presented with symptoms of acute pancreatitis as the prevailing manifestation. In addition, the presence of acute pancreatitis in leptospirosis is reviewed. Patient was managed with conventional therapy and the outcome was favourable.

Key Message: Rare case of leptospirosis induced acute pancreatitis.

Key Words: Leptospirosis ; Acute pancreatitis

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Introduction

Leptospirosis is a disease caused by the bacteria *Leptospira interrogans*, of order spirochetalis and is worldwide zoonoses. It can be transmitted by direct contact with urine, blood or infected tissues of infected animals or by exposure to contaminated water[2],[3]. Leptospirosis has a worldwide occurrence but is most common in temperate or tropical climates. Symptoms of leptospirosis include high fever, severe headache, chills, muscle aches, and vomiting, and may include jaundice (yellow skin and eyes), red eyes, abdominal pain, diarrhea and rash. In India, the disease appears most commonly during post-monsoon period and may assume an epidemic potential. First reported from Andaman in 1920s and reports have been more frequent since 1980s, especially from the southern states of Tamilnadu, Karnataka, Maharashtra and Kerala. All available evidence suggests that this disease is now

emerging as an important public health problem since recent years in states like Gujarat and Orissa[3]. Jaundice and acute renal failure are the two most common complications associated with Leptospirosis. Pancreatitis is one of the rare complications associated with leptospirosis.

Acute pancreatitis is characterized by acute inflammation and necrosis of pancreas parenchyma, focal enzymatic necrosis of pancreatic fat and vessel necrosis - hemorrhage. These features are produced by intra-pancreatic activation of pancreatic enzymes. Acute pancreatitis has a high mortality rate of about 20%. Most common symptoms are abdominal pain, nausea, vomiting, diarrhea, loss of appetite and fever[5],[6].

Very few cases of leptospirosis induced acute pancreatitis are reported in literature. Two cases were reported in World Journal of Gastroenterology[1], one case was reported from Swizerland due to Wile's disease. Another case of acute pancreatitis and cholecystitis is reported in Journal of microbiology immunology and infection [7]. A report of 10 cases was published in Journal of Pediatric Infectious Disease in 1998.[6]

Case Report

A 45 year old female patient was admitted to medicine unit of our hospital on 22/11/06 with complaints of high grade fever associated with chills and rigors followed by sweating for the previous 3 days. She also had chest pain which was of pricking nature and increased on lying down and deep breathing. She had a history of gastritis for 15 years. She also complained of abdominal pain and decreased urine output. On examination vital signs were normal. Laboratory investigations on day of admission showed elevated serum creatinine: 3.1mg/dL, Blood urea: 128mg/dl, Total/Direct bilirubin: 9.8/7.6 mg/dL, Alkaline phosphate: 396 U/L and platelet count: 22,000, White Blood Cell count 15,000-20,000 cells/mm³, epithelial cells: 5-6 in urine. Test for leptospirosis was found to be positive on second day along with amylase: 1429 U/L, lipase: 60U/L, Lactate dehydrogenase: 856 U/L. She was referred to Department of Surgery where an abdominal ultrasound was done which was found to be normal. She was administered conventional therapy of benzyl penicillin 1 million units, injection Azetronam, IV fluids and analgesics and sedatives on *sos* basis.

On the third day there was a significant rise in creatinine: 4.2 mg/dL, Urea: 163mg/dl. She was continued on same therapy with addition of Doxycycline 100mg. Fourth day onwards, there was improvement in serum creatinine=3.9mg/dL, urea=153mg/dl, amylase=639 U/L, lipase= 284 U/L and platelet count: 60,000.

Patient improved and was discharged with appropriate advice for follow up after 15 days. All other laboratory investigations of the patient were normal including serum creatinine, total bilirubin, derived bilirubin, aspartate aminotransferase, alanine aminotransferase etc.

Discussion

The degree of illness in leptospirosis varies from asymptomatic to severe or fatal illness. The most common forms are [1] anicteric

and [2] icteric or Weil's syndrome[1],[5]. Anicteric leptospirosis is the more common and milder form, and often is biphasic. Almost 90% of patients will have this type of illness. This patient presented with the Icteric leptospirosis or Weil's syndrome which is more severe form and is characterized by complications like decreased renal function, pulmonary complications, jaundice, and hemorrhagic manifestations. Only 5-10% of patients have this severe form. Pancreatitis is one of the rare complications of leptospirosis[7]. The most consistent pathologic finding in leptospirosis is vasculitis of capillaries manifested by endothelial edema, necrosis, and lymphocytic infiltration.

Capillary vasculitis is commonly found to affect tissues like liver and kidney. It can also affect tissues like pancreas. The resulting loss of red blood cells and fluid through enlarged junctions and fenestrae, which causes secondary tissue injury, probably accounts for most of the clinical findings. Thrombocytopenia is considered to be another complication associated with 40-85% of cases[3]. It may also be associated to vasculitis as in above case. Oliguria , increased level of serum creatinine represent acute renal failure which were seen in this case. Similarly increased level of total bilirubin and direct bilirubin indicate impaired liver function.

For diagnosis of acute pancreatitis; abdominal pain, nausea, vomiting, diarrhea, loss of appetite, fever and simultaneous determination of both amylase and lipase was recommended by Chase et al. Ultrasound does not help much. Whereas C.T. scan which has 100% specificity and over 90% sensitivity, is the golden standard for diagnosis of acute pancreatitis. A CT scan study may be especially useful in cases where other laboratory investigations are inconclusive⁸. Elevation of lipase and serum amylase levels are important yardsticks in diagnosing acute pancreatitis. The increase in value of amylase by three folds from upper limit also confirms the diagnosis of

acute pancreatitis[1],[6]. In this patient amylase value was more than tripled along with the elevated value of lipase on fourth day indicating involvement of pancreas. Since the above tests confirmed the diagnosis, CT scan was done for the patient. Leptospirosis associated with pancreatitis is managed with antibiotics to prevent bacterial infections and supportive measures like nutritional support.

Conclusion

Acute pancreatitis which may be mild to life threatening is rarely associated with leptospirosis. Establishing a rapid diagnosis through laboratory investigations and radiological studies and keeping the differential diagnosis of leptospirosis while treating symptoms of acute pancreatitis may be life saving.

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