

Case Report

A REPORT OF TWO CASES: POST FLOOD AUTOPSY FINDINGS IN URBAN PATIENTS WITH AN UNUSUAL PRESENTATION OF LEPTOSPIROSIS WITH HEMORRHAGIC PNEUMONIA IN GOVERNMENT MEDICAL COLLEGE, SURAT

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ABSTRACT

South Gujarat is endemic zone for leptospirosis in paddy workers but recently we have post flood plenty of urban patients who were presented with high grade fever, dyspnea & haemoptysis with rapid deterioration. Clinicians were suspecting an outbreak of Hantavirus or leptospirosis. Both our patients were serologically negative for leptospirosis ante mortem, but alveolar hemorrhage & raised urea was the only finding. Both our patient rapidly deteriorated.

We performed autopsy & took post mortem samples for serologically & HP Examination of tissue.

Serological finding showed one patient positive for PCR and second was positive for Leptocheck and IgM ELISA.

On HP examination we observed massive intra-alveolar hemorrhage, interstitial nephritis, vasculitis in spleen and kidney, myocarditis & hemorrhage in various organs like heart, suprarenal gland, and subarachnoid space in both our patient. Levaditi's stain was also performed but results were not conclusive. IHC for kidney tissue was not possible due to lack of facility. Extensive hemorrhage in lung was the cause of death in both patients. Follow up autopsy studies of 30 patients were showing same histopathological findings.

Key words: Leptospirosis, hemorrhagic pneumonia.

INTRODUCTION

Leptospirosis is worldwide sporadic zoonotic disease, caused by a pathogenic species of the genus leptospira interrogans; most common in humid subtropical & tropical region.¹ Species has several serological variants (the serovar). The serovar distribution varies with the geographical region. Recently genus leptospira is classified into 13 species^{1, 2} based on shared antigen.

Leptospirosis is considered a protean disease in reference to variety of signs & symptoms and rarely an unusual presentation in course of its biphasic illness.² Human is the end host for

leptospirosis, it spreads by intact skin, rarely by nosocomial route.

We report two autopsy cases of leptospirosis with hemorrhagic pneumonia.

CASE REPORT

Both the patients were young male (18 & 17years respectively) from city area with history of exposure of flood water. Initial presentation was mild fever with myalgia & cough. Both patients had blood in sputum, rapidly deteriorating to ARDS, pulmonary hemorrhage & death. Ante mortem laboratory investigation showed WBC count 18,600 and 13,600/cmm

with neutrophilia, platelet count was markedly reduced 11,000 & 81,000/cmm respectively. Peripheral Smear for Malaria Parasite was negative & prothrombin time was normal. Liver function tests showed no significant change in enzyme but showed direct bilirubin 1.9mg/dl & 2.00mg/dl respectively. Kidney function tests showed normal creatinine level but increase in urea level 113mg/dl & 59mg/dl respectively. Both patients were serologically negative for IgM antibody for leptospirosis ante mortem..

Post mortem serological tests were performed for hanta virus in first patient at NIV Pune which was negative. Serological test for leptospirosis also was negative, but PCR for leptospirosis was positive. In second patient IgM rapid leptochek & lepto IgM ELISA were positive. MAT & PCR were negative.

Histopathological findings of both cases showed interstitial and alveolar hemorrhage of lung in addition one case showed feature of pneumonia. Vasculitis is appreciated in spleen and kidney in one case. Hemorrhage in heart wall, suprarenal gland and subarachnoid space was also noticed.

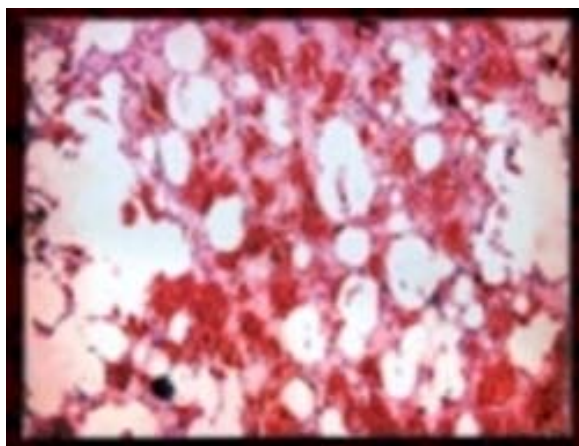


Figure 1: Photo micrograph showing intra-alveolar hemorrhage in lung. (H&E x 100)

DISCUSSION

South Gujarat, have the epidemic of leptospirosis, in monsoon season, in paddy workers of field, during July to September. Most of the patients have specific pathological presentation, in the form of multi organ involvement. Liver was the most commonly involved organ with jaundice, pruritus & tender hepatomegaly. Second common organ involved is kidney with manifestation of oliguria & azotemia. The third organ involved is lung with sudden onset of breathlessness & hemoptysis.³

We are having two patients from urban population with clinical presentation of weakness, fever & myalgia rapidly progressing to acute respiratory distress, hemoptysis & rapid deterioration.

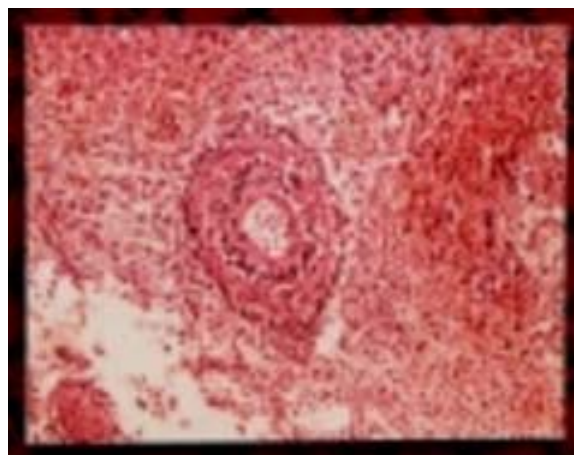


Figure 2: Photomicrograph showing Vasculitis in spleen.(H&E x 200)

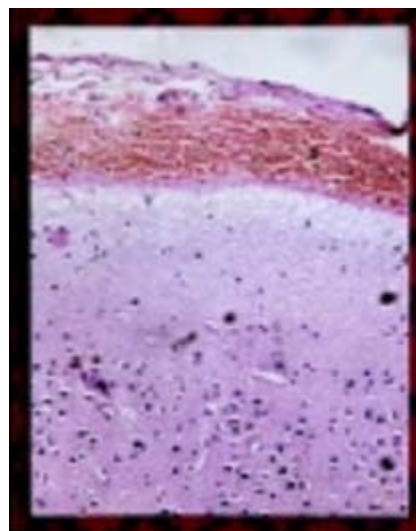


Figure 3: Photo micrograph showing subarachnoid hemorrhage in brain. (H&E x 100)

Leptospirosis is presently came to international attention as a infectious disease having biphasic clinical spectrum showing influenza like infection which rapidly progress to fulminant fatal disease characterized by jaundice, renal failure, hemorrhage & shock.⁴

Both our patient when admitted, had history of exposure to flood water, having fever & myalgia, with rapid conversion to ARDS & pulmonary hemorrhage. Pulmonary manifestation were reported to be less prominent in leptospirosis.⁵ The epidemic of leptospirosis following heavy monsoon flood in

Mumbai in year 2000 with prominent pulmonary hemorrhage was observed.⁴

A case was also reported from Brazil who had history of swimming through flood water, presented to hospital with mild symptom, developed hemoptysis & pulmonary hemorrhage within 3 days.⁴ When severe pulmonary hemorrhage occur, differential diagnosis was kept as falciparum malaria, septicemia, DIC & hanta virus infection with pulmonary syndrome.^{4,5}

Leptospirosis is identified directly from infected tissue by dark field microscopy, fluorescent antibody assay, blood culture, C.S.F., urine or affected organ may yield positive result. Serological identification is more useful clinically; include Latex test, Elisa test & dipstick test. MAT uses a battery of antigen from common (frequently locally endemic) leptospira serovar available at reference laboratory such as center for disease control & prevention (CDC).

Positive result is defined as a 4- fold rise in titer between acute & convalescent specimen. Additional diagnostic test for leptospirosis is polymerase chain reaction (PCR). Our both patient were negative for ante mortem serological test but one showed positive PCR^{1,3,5,6}. We also performed Levaditi's stain in tissue which was negative. IHC for kidney tissue was not possible due to lack of facility.

We have, further, 30 more autopsy cases from urban area having history of exposure to flood water, with similar clinical, autopsy and histopathological findings. Laboratory diagnosis of leptospirosis takes long culture time, low recovery rate, low sensitivity of acute serological

test. So it should not be the basis on which treatment is initiated. When there is history of exposure empiric therapy should be started.

ABBREVIATIONS

CDC: Centre for Disease Control
 IHC: Immunohistochemistry
 HP: Histopathology
 IgM: Immunoglobulin M
 ELISA: Enzyme Linked Immunosorbent Assay
 PCR: Polymerase Chain Reaction
 NIV: National Institute of Virology
 ARDS: Acute Respiratory Distress Syndrome

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