

1. INTRODUCTION

- ❖ Leptospirosis, a zoonosis caused by the spirochete *Leptospira*, is acquired by contact with **urine of infected animals, mainly rodents**, through cuts and mucous membranes.
- ❖ Traditionally considered as an occupational disease affecting farmers and sewer workers, incidence through **recreational exposure via freshwater activities** has been increasing.
- ❖ It is a **notifiable disease**, with around 150 cases reported annually in the US.

2. CASE REPORT

- ❖ 32-year-old homeless man presented with fever, chills, nausea, myalgias, and headache for one day.
- ❖ UDS was positive for methamphetamine.
- ❖ **Vitals:** 101.2 F and heart rate 115/minute.
- ❖ **Exam:** Tooth decay and track marks, non tender abdomen.
- ❖ **Labs:** WBC count of 14.8k, platelet count (PC) 177k, CK 1036.
- ❖ **TEE** did not show any vegetations.
- ❖ **CT scan chest** showed a right lung consolidation.
- ❖ Patient was started on Vancomycin and Piperacillin-tazobactam.
- ❖ On HOD 1, patient developed watery, non-bloody diarrhea and lower limb pain.
- ❖ By HOD 3, PC fell to 44k, while creatinine started rising. Patient reported diffuse abdominal pain and now had scleral icterus with bilateral conjunctival congestion. Total bilirubin was 12.8.



Fig A



Fig B

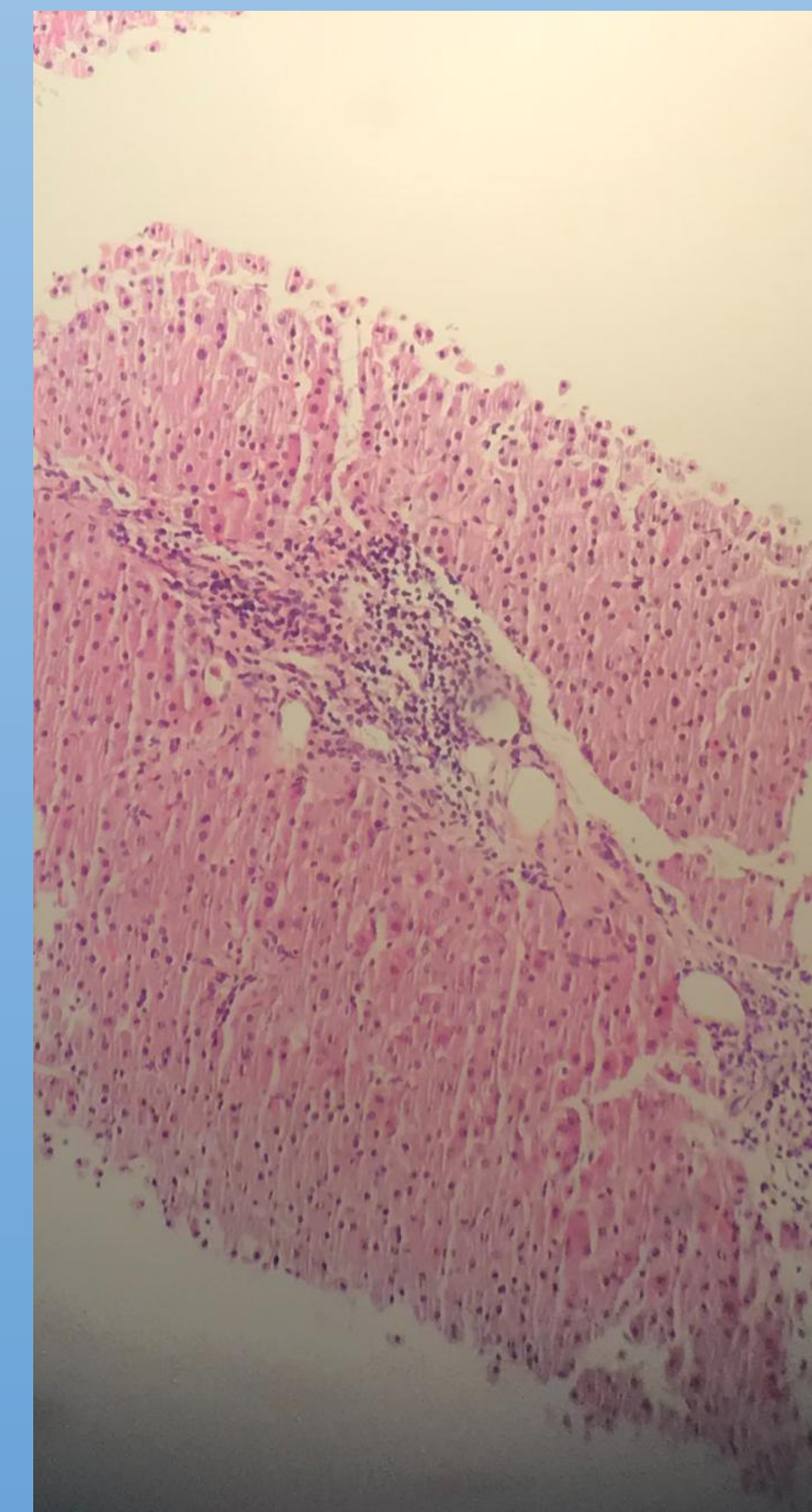


Fig C

A: Bilateral conjunctival suffusion, characteristic of leptospirosis
 B,C: Liver biopsy showing liver parenchyma with sinusoidal congestion and mild chronic inflammation within the portal tracts consisting mainly of lymphocytes and occasional plasma cells

WEIL'S DISEASE = Leptospirosis + Renal failure + Jaundice

Traditionally considered as an occupational disease affecting farmers and sewer workers, incidence of Leptospirosis through recreational exposure via freshwater activities has been increasing in the U.S.

- ❖ Stool studies, peripheral smear and hepatitis panel were unremarkable.
- ❖ **Liver biopsy** showed sinusoidal congestion and mild chronic inflammation within the portal tracts, with rare interface hepatitis.
- ❖ An infectious cause was strongly suspected in view of the bicytopenia and multi-systemic changes. Rhabdomyolysis and AKI could also be attributed to meth use.
- ❖ On HOD 12, **Leptospira IgM Ab** returned positive. The patient received a 7-day course of oral doxycycline.
- ❖ Eventually, labs returned to baseline, and he was discharged on HOD 20.

3. DISCUSSION

- ❖ The fulminant form of leptospirosis, Weil's disease, presents with **renal failure and jaundice**.
- ❖ **Conjunctival suffusion (redness without purulent exudates)** is characteristic in the initial leptospiremic phase.
- ❖ Hepatocellular damage and disruption of intercellular junctions leads to bilirubin elevation in the immunological phase.
- ❖ Antibodies take 3-10 days to develop. Hence **IgM serological tests must be done a week after symptom onset**.
- ❖ PCR is very sensitive and specific in the acute phase.
- ❖ Microscopic agglutination test is considered the gold standard due to its high specificity.
- ❖ Starting treatment with empiric antibiotics early on without waiting for testing results can be lifesaving, especially in cases with a high degree of clinical suspicion.