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REFERENCES

1 Hardeman RR, Medina EM, Boyd RW. Stolen Breaths. N Engl J Med. 2020;383(3):197-199. doi:10.1056/NEJMp2021072.

2 Boatright D, Berg D, Genao I. A Roadmap for Diversity in Medicine During the Age of COVID-19 and George Floyd. J Gen Intern Med. Published online January 19, 2021:1-3. doi:10.1007/s11606-020-06430-9.

3 Maas S. When Racism Literally Makes You Sick. Minnesota Alumni. Published 2020. Accessed October 28, 2020. https://www.minnesotaalumni.org/stories/when-racism-makes-you-sick.

4 Evans M, Webster M, Corey M. People of color hit harder by COVID-19 in Twin Cities, data confirm - StarTribune.com. Star Tribune. Published August 1, 2020. Accessed October 28, 2020. https://www.startribune.com/people-of-color-in-twin-cities-continue-to-bear-brunt-of-coronavirus/571982452/?refresh=true.

5 COVID Basic Needs Response Group. Hennepin Healthcare COVID-19 Impact And Basic Needs Survey Final Report.; 2020. http://hennepinhealthcare.org/basic-needssurvey.

Leptospirosis: a case of sudden multi-organ failure in a previously healthy male

BY SIMISOLA ODUSANYA, BS, AND MICHELLE KIHARA, BA

A 49-year-old male with no past medical history, presented from outside-hospital (OSH) in septic shock and multi-organ failure. The patient's wife reported that seven days prior to his presentation, he developed a headache, diffuse muscle aches, and a fever of 102º F. The next day, he developed shortness of breath, hemoptysis, diarrhea, nausea, vomiting, conjunctival suffusion, and decreased urine output. The lab values at the OSH were significant for elevated inflammatory markers and elevated creatinine. His social history was significant for hobby farming. He was started on ceftriaxone and azithromycin and an emergent bronchoscopy performed for persistent hemoptysis showed diffuse alveolar damage. His respiratory status worsened, which prompted intubation and the start of Continuous Renal Replacement Therapy (CRRT) for acute kidney injury, and he was airlifted to our tertiary care hospital. When our team saw him, the physical exam was significant for profound jaundice, scleral icterus, and diffuse crackles, with vital signs notable for hypotension, tachycardia, oxygen saturation of 82%, and fever of 102º F. Additionally, the inflammatory markers were elevated: ESR 38, CRP 328.4, and lactate 3.9. The initial laboratory evaluation revealed the following: ALT 200, AST 500, anemia (Hgb 9), thrombocytopenia (platelets 18K), leukocytosis (WBC-29K), elevated D-dimer, creatinine 5, CK 10K, and INR 1.26. The chest x-ray showed diffuse interstitial opacities and bilateral effusions, and the cardiac ECHO showed LVEF of 35-40%, and diffuse hypokinesis. The antibiotics were broadened to vancomycin, fluconazole, doxycycline, and zosyn, and the patient was started on pressors for distributive shock.

Diagnosis and treatment

A comprehensive infectious workup was negative, including serology for anaplasma, hepatitis B and C, leptospira, aspergillus, babesia, hantavirus, rickettsia, and negative urine antigens for legionella, histoplasma, coccidioides and blastomyces. Further investigation with Karius assay returned positive for Leptospira Interrogans. Patient's clinical condition improved 10 days after admission, and he was transferred from the SICU to the medical floor. CRRT was stopped and he was started on hemodialysis. The patient had significant improvement in his kidney and liver function tests and was discharged with continuation on outpatient dialysis until complete renal recovery.

Discussion

Ninety percent of cases of leptospirosis are mild and self-limited or subclinical; 10% can develop into severe forms, as seen in this patient. The illness generally presents with the abrupt onset of fever, rigors, myalgias, and headache in 75-100% of patients. Conjunctival suffusion is an important but frequently overlooked sign, occurring in about 55% of patients. This case illustrates the importance of physical exam findings in evaluation of a clinical presentation. Conjunctival suffusion is not a common finding in other infectious diseases; its presence in a patient with a nonspecific febrile illness should raise the possibility of leptospirosis. This case highlights the importance of obtaining a thorough patient history and considering a broad differential when working up a complex clinical presentation that includes acute decompensation, multiple organ failure, and suspected infectious etiology. **MM**

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REFERENCES

Budihal SV, Perwez K. "Leptospirosis diagnosis: competency of various laboratory tests." Journal of clinical and diagnostic research: JCDR vol. 8,1 (2014).

Cagliero J, Villanueva SYAM, Matsui M. "Leptospirosis Pathophysiology: Into the Storm of Cytokines." Frontiers in cellular and infection microbiology, 8, 204 (2018).

Maroun E, Kushawaha A. "Fulminant Leptospirosis in an urban setting as an overlooked cause of multiorgan failure: a case report." J Med Case Reports 5, 7 (2011).