

Abstract Form

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Project Title:	Hypervirulent Klebsiella Septicemia with Multiple Solid Organ Abscess Formation

Research Category (please check one):

<input type="checkbox"/>	Original Research	<input checked="" type="checkbox"/>	Clinical Vignette	<input type="checkbox"/>	Quality Improvement	<input type="checkbox"/>	Medical Education Innovation
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Abstract

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Despite advancements in antibiotics and interventions, bloodstream infection continues to remain a major cause of mortality and morbidity, especially bacteremia caused by gram-negative bacteria found in both hospital and community-dwelling settings. Klebsiella is a gram-negative bacteria that is found to cause 16% of hospital-onset and 5.4% of community-onset gram-negative bacillary bacteremia in adults. Diabetic patients have a much greater risk of attracting this microbe. Furthermore, Klebsiella is especially dangerous for it is associated with hypervirulent strains that can cause invasive liver abscess syndrome which can sometimes metastasize to multiple organ sites, leading to detrimental effects ranging from organ inflammation to organ failure with symptoms elicited depending on the organ affected. This is a unique case of hypervirulent klebsiella septicemia with multiple organ abscess formations in a diabetic patient.

Case Presentation

A 57-year-old male with a history of type 2 diabetes mellitus and hypertension presented with low blood pressure after his appointment with his primary care physician. He reported fever, chills, night sweats, nausea, vomiting, and abdominal pain for the past month. His symptoms progressed to bilious emesis, urinary retention, and worsening left lower quadrant pain. Physical exam was remarkable for a temperature of 103F BP 87/55 mmHg, HR 109 bpm. Physical exam demonstrated an ill-appearing male with abdominal tenderness to palpation. Laboratory studies showed a white blood cell count of 40.2 cells/mm³ with 21% bandemia. The comprehensive metabolic panel was significant for sodium of 124, BUN 30, Cr 1.66, Glucose 335, ALP 454, ALT 295, AST 326, total bilirubin 1.1, lactic acid 3.9. Urine analysis showed >1,000 glucose, large leukocyte esterase, RBC 5-10, WBC >50 with clumps. He was started on broad-spectrum antibiotic therapy and imaging studies would go on to reveal multiple abscesses in his liver, right pararenal, and prostate. Blood cultures grew K. pneumoniae. He underwent placement of drains in the liver, right kidney, prostate, and partial trans-urethral resection of the prostate. He developed an acute change in mentation and neurologic findings significant for right eye medial and lateral nerve palsy and left-sided weakness. CT and MRI of the brain revealed multiple ring-enhancing abscess lesions. He was transferred to a facility for a higher level of care for possible stereotactic drainage of brain abscess. During his stay, he continued to demonstrate marked clinical improvement with intravenous antibiotics. He did not undergo any further neurological intervention. He was later followed up for the removal of drains with cholecystectomy. The patient tolerated the procedure well and remains asymptomatic.

Conclusion

Management of a patient who has been infected by hypervirulent Klebsiella that led to septicemia and subsequent solid organ abscess formation can be quite challenging. A strong interdisciplinary team is required to approach these patients' treatment plans and courses with the greatest outcomes. In light of this, it is imperative to work closely with cardiology, neurology, pulmonology, and infectious disease to strategically and carefully tackle each part of the disease course.