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RESEARCH ARTICLE

UNPROVOKED ADULT-ONSET E.COLI MENINGITIS IN ABSENCE OF COMMON RISK FACTORS: A RARE CASE REPORT

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ABSTRACT

E. coli meningitis is a rare diagnosis in adults and is mostly seen in neonates or in individuals with risk factors like immunosuppression, neurosurgical procedures, head trauma, or systemic infections. In this case, we present a 28-year-old female with no known comorbidities or predisposing conditions who developed E. coli meningitis, making it an exceptionally rare occurrence. She initially presented with high-grade fever and altered sensorium, and CSF analysis later confirmed E. coli as the causative organism. Blood and urine cultures also came back positive for E. coli, pointing toward systemic involvement. The bacteria was resistant to most antibiotics and only sensitive to colistin, which was started promptly. Despite ICU care, targeted antibiotic therapy, and all supportive measures, the patient's condition deteriorated following a seizure, and she eventually suffered cardiopulmonary arrest. This case highlights how E. coli meningitis can present even in completely healthy adults without any obvious source, underlining the importance of timely CSF analysis and culture to guide management. Categories: Internal Medicine, Infectious Disease.

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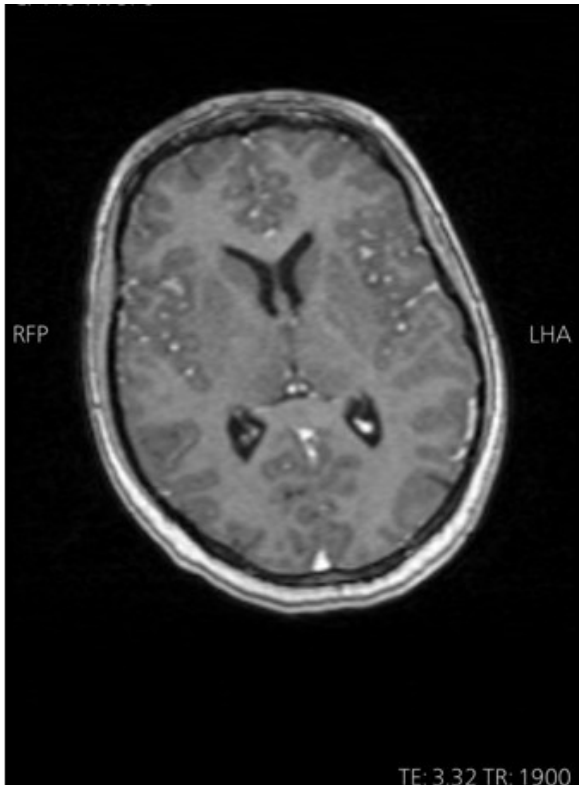
INTRODUCTION

Meningitis caused by Escherichia coli is a rare entity in adults and is commonly associated with neonatal infections. E. coli meningitis in adults is usually seen in immunocompromised individuals or as a complication secondary to neurosurgical interventions, head trauma, or bacteremia. This case is particularly rare since the patient had no significant past medical history, was on no immunosuppressive regimen, and had no evident source of infection. Here, we discuss a rare case of E. coli meningitis in an adult with no predisposing factors and highlight diagnostic challenges and the role of CSF examination in management.

CASE PRESENTATION

A 28-year-old female presented to the emergency department with complaints of high-grade fever associated with chills for five days and altered sensorium for three days. The fever was continuous and not relieved by medications. She had initially sought treatment from a local practitioner but showed progressive deterioration. There was no history of tuberculosis, diabetes mellitus, hypertension, seizure disorder, prolonged hospitalization, head trauma, neurosurgical intervention, smoking, or alcohol intake. On examination, blood pressure was 128/70 mmHg, temperature 101°F, respiratory rate 16/min, and oxygen saturation 98% on room air. The patient was drowsy and disoriented with Glasgow Coma Scale score E3V4M4. Neck rigidity was present. Bilateral plantar responses were extensor. Magnetic resonance imaging (MRI) of the brain revealed recent infarcts in bilateral gangliocapsular regions, left midbrain posteriorly involving corona radiata, and right cerebral peduncle. FLAIR hyperintensities were noted along bilateral cerebellar hemispheres, basal cisterns, and surface of brainstem with mild leptomeningeal and pachymeningeal enhancement suggestive of meningitis with possible vasculitic involvement. Lumbar puncture was performed. Cerebrospinal fluid culture grew Escherichia coli which was resistant to most antibiotics and sensitive only to colistin. Blood and urine cultures also grew E. coli, indicating systemic infection.



The patient was shifted to the intensive care unit and started on intravenous colistin along with supportive management including steroids, osmotherapy, and antiepileptics. Despite initial stabilization, she developed generalized tonic-clonic seizures on the tenth day of hospitalization requiring intubation and mechanical ventilation. Her clinical condition progressively worsened, and she suffered cardiopulmonary arrest on 31 October 2023

DISCUSSION

E. coli meningitis in adults is rare and carries a high mortality rate. Most reported cases occur in elderly or immunocompromised individuals. In the present case, no identifiable predisposing factors were found, making it an unusual presentation. The presence of multifocal infarcts suggests inflammatory vasculitis or septic embolic phenomena secondary to severe infection.

Cerebrovascular complications in bacterial meningitis are associated with increased mortality and poor neurological outcomes. Multidrug-resistant gram-negative organisms further complicate management. Colistin remains a last-resort antibiotic for extensively drug-resistant infections; however, delayed response and systemic complications often worsen prognosis. This case underscores the importance of early CSF examination, prompt microbiological diagnosis, and aggressive management. It also highlights that severe gram-negative meningitis can occur even in young, otherwise healthy individuals.

CONCLUSION

Adult-onset E. coli meningitis without identifiable risk factors is rare but potentially fatal. Early recognition, immediate lumbar puncture, and culture-guided antibiotic therapy are crucial. However, multidrug resistance and neurological complications such as infarcts significantly increase mortality risk. Clinicians should maintain a high index of suspicion even in immunocompetent individuals presenting with acute febrile encephalopathy.

Additional Information

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REFERENCES

1. McGill F, *et al*. Diagnosis and management of acute meningitis in adults. J Infect. 2016.
2. Tunkel AR, *et al*. Practice Guidelines for the Management of Bacterial Meningitis. Clin Infect Dis. 2004.
3. Kohlmann R, *et al*. Community-acquired adult Escherichia coli meningitis. BMC Infect Dis.
4. Yang TM, *et al*. Clinical characteristics of adult Escherichia coli meningitis. Japanese Journal of Infectious Diseases.
5. Kim K. Pathogenesis of bacterial meningitis. Nat Rev Neurosci.
6. Brouwer MC, *et al*. Diagnosis and treatment of acute bacterial meningitis. Clin Microbiol Rev.

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