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Secondary Central Nervous System Infection by Acinetobacter baumannii Following Intracranial Hematoma Evacuation: A Case Report and Diagnostic-Therapeutic Insights

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Background

Central nervous system (CNS) infection after intracranial hematoma evacuation, especially those caused by multidrug-resistant organisms, is associated with poor prognosis and poses significant therapeutic challenges. Acinetobacter baumannii is a common nosocomial pathogen.

Case Presentation

A 41-year-old male with a history of hypertension was admitted due to sudden onset of impaired consciousness and urinary incontinence. Cranial CT revealed a large hematoma in the left frontal lobe and basal ganglia, with intraventricular and subarachnoid hemorrhage. Emergency hematoma evacuation, cranioplasty, and dural repair were performed, with prophylactic ceftriaxone administered postoperatively. On postoperative day 3, the patient developed high fever; BALF cultures were negative. Pulmonary infection was later suspected and piperacillin-tazobactam was administered, with BALF cultures yielding Escherichia coli and Enterobacter cloacae. After pulmonary improvement, antibiotics were discontinued, but recurrent fever prompted a switch to meropenem. CSF analysis indicated CNS infection, and vancomycin was added. CSF TNGS identified A. baumannii, leading to cefoperazone-sulbactam combined with intravenous and intrathecal polymyxin B. The patient’s temperature and CSF parameters improved. During treatment, electrolyte disturbances, coagulopathy, and hepatic and renal dysfunction occurred, managed with supportive care and CRRT. Antibiotics were discontinued after CSF normalization. The patient recovered and was discharged, currently able to live independently.

Discussion

Rapid pathogen identification is crucial in complex CNS infections. When cultures are negative, TNGS can promptly guide targeted therapy. Vigilance for drug-related adverse effects and multidisciplinary collaboration are essential for optimizing outcomes.