

# Q11613

## Hemorrhagic Transformation of Left M1 Ischemic Stroke: Multidisciplinary Management and Outcomes

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**Abstract** This [case report](#) details the management of a 55-year-old male presenting with an [ischemic stroke](#) involving the left [middle cerebral artery](#) (MCA) and subsequent [hemorrhagic transformation](#) (HT). The patient underwent stent-assisted [angioplasty](#) for left M1 stenosis and experienced post-procedural complications, including [intraparenchymal hemorrhage](#), [intraventricular hemorrhage](#) [acute hydrocephalus](#), and ventilator-associated [pneumonia](#). A [multidisciplinary](#) approach, involving neurology, neurosurgery, and [critical care](#) teams, enabled [stabilization](#) and transfer to a referral center for continued [rehabilitation](#). This case highlights the complexities of managing ischemic stroke with HT and the role of timely interventions, including [external ventricular drainage](#) and tailored [antibiotics](#).

### Introduction

Hemorrhagic transformation (HT) is one of the recognized [ischemic stroke complications](#), particularly in patients undergoing [reperfusion](#) therapies. The management of HT poses significant clinical challenges due to the risk of neurological deterioration, increased [intracranial pressure](#) (ICP), and secondary complications, such as [infection](#). This report discusses a case of HT managed with stent-assisted angioplasty, external ventricular drainage, and comprehensive ICU care.

### Case Presentation

#### Patient Profile:

A 55-year-old male, former [smoker](#), with a history of bilateral occupational hearing loss and hypertension managed with [atenolol](#) and [losartan](#). Presented to the emergency department following an acute onset of right upper limb paresthesia, aphasia, and altered consciousness.

#### Clinical Course:

##### Initial Evaluation and Management:

CT and multimodal imaging suggested left M1 occlusion with [ischemic penumbra](#) ([ASPECTS](#) 10).

Emergency [angiography](#) confirmed M1 stenosis, treated with angioplasty and stent placement.

##### Neurological Deterioration and Hemorrhagic Transformation:

The patient developed right hemiplegia, aphasia, and decreased consciousness. CT revealed an intraparenchymal hematoma with ventricular extension and subarachnoid hemorrhage.



[External Ventricular Drain for Hydrocephalus Following Intraventricular Hemorrhage](#) was performed

### Intensive Care Unit Management:

Sedation with propofol and midazolam; mechanical ventilation initiated. HT managed with ICP monitoring and controlled hypertension. Ventilator-associated pneumonia by *Enterobacter cloacae* and *Serratia marcescens* treated with meropenem and ceftolozane/tazobactam. Percutaneous tracheostomy was performed for prolonged respiratory support. Neuroimaging Findings:

Serial CT scans demonstrated resolving hematoma and ventricular hemorrhage, with no new ischemic lesions.



The EVD was removed after confirming stable ventricular size.

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### Discussion

Hemorrhagic transformation of ischemic stroke represents a critical event requiring coordinated management. In this case, stent-assisted angioplasty successfully addressed the underlying vascular stenosis but was followed by HT, necessitating surgical and critical care interventions. Key management strategies included:

Prompt recognition and surgical management of hydrocephalus with EVD placement. Strict ICP monitoring and permissive hypertension to maintain cerebral perfusion pressure. Multidisciplinary collaboration for managing respiratory complications, including ventilator-associated pneumonia and subsequent tracheostomy. This case underscores the importance of early recognition, aggressive management, and individualized care for ischemic stroke complicated by HT.

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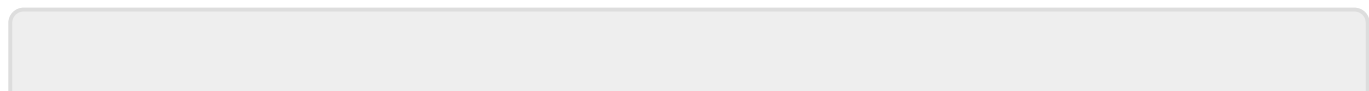
**Conclusion** This case highlights the challenges and complexities of managing ischemic stroke with hemorrhagic transformation. Successful outcomes hinge on early diagnosis, a multidisciplinary approach, and tailored therapeutic strategies. Future research should focus on refining intervention protocols to minimize complications in similar clinical scenarios.

**Key Points** Challenges: HT, acute hydrocephalus, and infection in a critical care setting. Interventions: Angioplasty with stenting, EVD placement, and targeted antimicrobial therapy. Outcomes: Neurological stabilization and successful transition to rehabilitation.

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**Ethics Approval:** Informed consent was obtained from the patient for the publication of this case report.



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