

**C57**

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**Acute Ischemic Stroke in a Pediatric Patient with Cerebral Arteriovenous Malformation**

**Background:**

Pediatric stroke is a rare entity with high mortality and morbidity. This case report details a complex ischemic stroke with a mimicking diagnosis and multiple risk factors, leading to the possibility of different stroke etiologies.

**Case description:**

A 7-year-old male with a history of patent foramen ovale (PFO), an episode pneumococcal meningitis, and a left-sided grade 3 arteriovenous malformation presented with fever, headache, and tiredness. He was initially treated with ceftriaxone for suspected bacteremia. However, he worsened with altered mental status and nuchal rigidity. Blood cultures grew *S.pneumoniae*, and cerebrospinal fluid (CSF) confirmed bacterial meningitis. Vancomycin was added with ceftriaxone. The patient also developed a new-onset cardiac murmur. Transthoracic echocardiogram (TTE) revealed new mitral regurgitation meeting criteria for possible infectious endocarditis (IE), that was managed with the same antibiotics. After an initial improvement, he developed right-sided weakness. The MRI angiogram revealed an acute left middle cerebral artery (MCA) infarct with worsening mass effect. However, he suffered from significant right-sided hemiplegia requiring long-term physical and occupational therapy.

**Discussion:**

Pediatric stroke and meningitis can be difficult to differentiate, often leading to delays in diagnosis. In this case, several possible mechanisms for the stroke were considered, including bacterial meningitis, septic emboli, vascular steal, and cryptogenic stroke. Pneumococcal meningitis-induced stroke is unlikely, as it typically involves bilateral deep brain structures. Embolism from IE is also less likely since no vegetation was seen on TTE. However, a vascular steal from an AVM is supported by the patient's history of transient right-sided weakness, and a cryptogenic stroke due to paradoxical embolism because of the presence of patent foramen ovale (PFO). Further investigations are needed to determine the exact cause.