

## Clinical Image

# Mycotic Cerebral Aneurysm: A Rare Complication of Infective Endocarditis

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Intracranial mycotic aneurysm or Infected Aneurysm (IA) is rare and accounts for 2-4 % of neurologic complications of infective endocarditis [1]. The terminology «mycotic aneurysm» was used for the first time by William Osler in Gulstonian Lectures of 1885, it refers to a dilatation of an arterial wall caused by any infectious etiology [2]. It is a serious clinical condition that carries a significant morbidity with up to 80% mortality rates when ruptured [3]. Therefore, an early and rapid diagnosis is critical for timely treatment to optimize patient outcome.

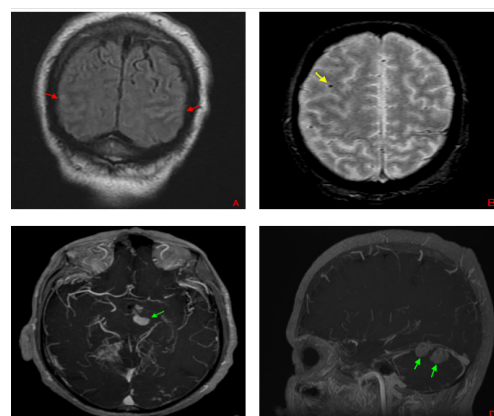
In infective endocarditis, a hematogenous spread of septic emboli leads to the development of arteritis that causes weakening of the vessel wall with subsequent contained rupture and formation of the pseudoaneurysm. The mycotic aneurysm can rupture resulting in intracerebral or subarachnoid hemorrhage [1,4].

Clinically, the mycotic aneurysm is silent until its rupture responsible for a subarachnoid or cerebral hemorrhage. In addition to symptoms related to infective endocarditis, the patient presents a sudden and severe headache, nuchal rigidity, photophobia, vision changes (intracranial hypertension), focal deficit, and consciousness disorders [1,5].

Computed Tomography Angiography (CTA), Digital Subtraction Angiography (DSA), and Magnetic Resonance Angiography (MRA) are excellent imaging modalities to establish the diagnosis and describe the infected aneurysm [5]. Contrast enhanced MRA is more efficient than 3D time of flight MRA(TOF), but it cannot replace DSA which detect the IA<3mm [4,6].

Radiographic features include focal vascular dilatation with a saclike from the vessel wall [7]. The diagnosis is established by a cluster of arguments: a systemic infection, multiple aneurysms that change in shape, size and number with arterial stenosis or occlusion close to the aneurysm [4,7,8]. MR can show other cerebral lesions: brain microbleeds, subarachnoid hemorrhage, parenchymal hemorrhage, and cerebral abscess (Figure).

Treatment includes antibiotics in association with endovascular or open surgery [1].



**Figure:** Infective endocarditis complicated with multiple ruptured infectious aneurysms. Coronal T2- FLAIR sequence (A) showed a subarachnoid hemorrhage (→). Axial T2\* sequence (B) showed a cortical microbleeds (→). Post contrast 3D T1 sequence with MIP reconstruction (axial (C), sagittal (D)) revealed multiple saccular aneurysm in the left posterior cerebral artery (→).

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