



## Internal Medicine Flashcard

## Subarachnoid hemorrhage as the key to the diagnosis

Miguel Miranda, MD MSc<sup>\*</sup>, Vera Montes, MD MSc, Sandra Sousa, MD MSc

Department of Neurology, Hospital de Cascais Dr. José de Almeida, Av. Brigadeiro Victor Novais Gonçalves, 2755-009, Alcabideche, Portugal



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## 1. Case description

A 70-year-old woman was admitted at the emergency department due to abdominal pain progressing over the last six hours. She had been feeling sick for the last month, with nausea and persistent fever. Initial work-up revealed mild anemia, elevated inflammatory markers and an unremarkable abdominal ultrasound. While at the emergency department, she suddenly progressed to coma, with admission to the intensive care unit. Both cranial CT scan and angiography were conducted, showing a cortical artery aneurysm surrounded by a sulcal subarachnoid hemorrhage on the left parietal convexity Fig. 1. What is your diagnosis for this patient?



Fig. 1. CT scan: axial view; CT Angiography: axial and sagittal views, respectively.

## 2. Discussion

With findings suggestive of a small mycotic aneurysm, a diagnosis of infective endocarditis was considered and later confirmed by trans-esophageal echocardiogram, which showed an aortic valve vegetation with severe aortic insufficiency and a mitral valve abscess with anterior leaflet rupture. Blood cultures identified *Streptococcus parva* as the infection culprit. The patient was transferred to a cardiac surgery center for timely surgical management.

Neurological manifestations (like transient ischemic attacks, ischemic or hemorrhagic strokes, cerebral microbleeds, cerebral abscesses, mycotic aneurysms, meningitis or toxic encephalopathies) are present in 40% of diagnosed cases of infective endocarditis (IE), being reported as the presenting symptom in nearly half of these patients [1].

Within patients with neurological complications of IE, 12–30% present cerebral hemorrhages due to: hemorrhagic transformation of ischemic strokes caused by septic emboli, rupture of mycotic aneurysms or vasculitis-induced cerebral microbleeds [1,2].

Mycotic aneurysms are present in 2–4% of IE patients [3], being typically located on the peripheral branches of the middle cerebral artery. They usually do not produce symptoms until they rupture, originating subarachnoid, intracranial or intraventricular hemorrhages [3].

In patients presenting with non-specific constitutional symptoms, identification of cerebral hemorrhage on CT scan and mycotic aneurysms on vessel imaging techniques (intra-arterial cerebral angiography, CT or MR angiography) can help guiding clinical reasoning towards the final diagnosis of an infective endocarditis.

<sup>\*</sup> Corresponding author.

E-mail address: [miguel.silva.miranda@hospitaldecascais.pt](mailto:miguel.silva.miranda@hospitaldecascais.pt) (M. Miranda).

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