Neurological Complication of Infective Endocarditis Mimicking Temporal Arteritis

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Dear Sir,

Infective endocarditis (IE) can present with systemic embolizations [1], which most frequently involve the central nervous system [2]. Intracerebral or subarachnoid hemorrhage (SAH), due to the rupture of mycotic aneurysm or to the rupture of pyogenic arteritis, is a less frequent complication of IE [3]. A few cases of retinal arterial occlusion as a complication of infectious endocarditis have been described [4–6].

We report the case of an uncommon presentation of infectious endocarditis with concomitant ischemic and hemorrhagic manifestations in the central nervous system, with clinical aspects similar to temporal arteritis.

Case Report

An 80-year-old man was admitted to our Department for sudden onset of severe headache, delirium and visual impairment with 'dark shadows' in both eyes. Personal history revealed reported diffuse arthralgias, anemia, elevation of ESR and C-reactive protein, previously interpreted as polymyalgia rheumatica. He also had multiple parodontopathies. Neurological examination showed the presence of meningeal signs and confusional state. A cerebral CT

scan showed a suprasellar SAH, extending toward pons and occipital lobes. General examination showed cardiac systolic apical murmur. Blood tests confirmed the presence of anemia (RBC 3,000,000 mm³, Hb 9 M), elevation of C-reactive protein (106 M) and fibrinogen (816 M). Angio-CT of cerebral vessels did not show any aneurysm or vascular malformation. We decided to submit the patient to angio-CT, although CT is not the gold standard test to detect intracranial mycotic aneurysms, because of patients' age and general conditions. A retinal fluoroangiography documented an acute ischemic optic neuropathy with bilateral branches occlusion of retinal arteries. Blood cultures showed the presence of *Streptococcus anginosus*, and a transthoracic echocardiography showed endocardic strands in mitral and pulmonary valves with severe mitral regurgitation. Intravenous antibiotic therapy with gentamicin and ampicillin/sulbactam was started. A follow-up CT scan done after 1 week from admission, 2 days after antibiotic treatment was started, showed an asymptomatic small parenchymal left occipital hemorrhage. The patient was evaluated by cardio-surgeons, who suggested valve replacement, and he underwent surgical intervention a month after discharge from our ward. No neurological or cardiological

complication followed cardiac surgery, and neurological examination 1 month after surgery showed only bilateral blurred vision, without focal neurological signs.

Discussion

We report the case of an 80-year-old man with a cryptogenic SAH concomitant to an embolic event in the retinal arterial tree and a subsequent asymptomatic small occipital hemorrhage. Differential diagnosis was relevant to therapeutic options. In fact, personal history of polymyalgia, presence of inflammatory markers and evidence of retinal ischemia at first suggested the diagnosis of temporal arteritis. This vasculitis may present with systemic signs such as anemia, fever, headache, stroke and polymyalgia [7]. Moreover, ocular symptoms (from ischemic optic neuropathy to retinal artery occlusion) are often present in temporal arteritis [8, 9]. Cerebral hemorrhage is rarely associated with giant cell arteritis. Thal et al. [10] described the case of a young girl with giant cell arteritis associated with vertebral artery aneurysm and SAH. Muller et al. reported a patient with temporal arteritis who developed cerebral hemorrhage, pulmonary infiltrates and glomerulonephritis [11]. In

our case, the presence of cardiac murmur, the positivity of blood culture and the evidence of valvular strands confirmed the diagnosis of IE.

Central nervous system complications occurring during IE are classified as cerebrovascular (TIA/stroke and/or hemorrhage), infectious (meningitis and abscess) and nonspecific (encephalopathy, seizures and headaches), with stroke being the most common complication [12]. Hart et al. [13], in a consecutive series of IE, found cerebrovascular events in 21% of cases (17% ischemic stroke/TIA, 6% brain hemorrhage). Intracerebral or subarachnoid hemorrhages, usually due to rupture of mycotic aneurysms, are reported in 2.7–7% of patients with IE [14–16]. However, case reports of SAH as a presenting feature of IE are not frequent [12–16]. Chukwudelunzu et al. [17], in a series of 489 patients with IE, found SAH only in 1%, and mycotic aneurysms were identified in only 2 out of 8 cases.

SAH and retinal embolism are common neurological sequelae of IE. The interesting feature of our case is that the concomitance of these two complications mimicked temporal arteritis that should be considered in the differential diagnosis.

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