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Microsurgery for the Aneurysms of the Basilar Artery Apex

L. Dãnãilã
Department of Vascular Neurosurgery, National Institute of Neurology and Neurovascular Diseases, Bucharest, Romania

Abstract

The aneurysms of the Basilar Artery apex (ABA) are not very common. My personal experience derives from having performed surgery on a number of 3340 patients with cerebral aneurysms at the Department of Vascular Neurosurgery II in Bucharest between 1979 and 2010. In 234 (7%) of the aneurysms they were located in the posterior vasculature. In 146 patients, representing 4.37% of the total number of patients with cerebral aneurysms and 62.39% of those with aneurysms of posterior vasculature, the location was in the basilar artery apex. The mean age of the 146 patients with aneurysms of the basilar artery apex (ABA) was 45.2 years, varying between 34 and 71 years old. Most cases (69 -47.26%) were in the 41-50 years age group. Aneurysms were found in 68 males (46.57%) and 78 females (53.42%) suggesting a slight predominance in female patients. The main reason for hospitalization was subarachnoid haemorrhage. There were four reports of patients having three episodes of subarachnoid bleeding in the three months preceding the surgery. The mean time between the last subarachnoid bleeding and the hospital admission was 26 days, ranging between 1 and 62 days. On admission three patients were in a severe general and neurological state (Hunt IV and V, respectively). The diagnostic assessment for those patients started with computer tomography (CT) followed by brain angiogram for the four main vessels. The main challenges for the surgical treatment of such lesions are due to the complex vascular anatomy of the basilar artery apex, to the direct vicinity of these aneurysms with the base of the skull and with vital neural structures in the interpeduncular fossa as well as due to difficulties in gaining proximal control over them. The post-surgical evolution was excellent and good in 131 (89.72%) of patients, unsatisfactory in 8 patients (5.48%), while 8 patients (5.48%) died. Three of the 8 patients marked by an unsatisfactory evolution presented with right-side hemiballismus and paresis of the 3rd cranial nerve, while other three remained in a vegetative state. Post-operative hydrocephaly was reported in 10 patients (6.8%).

Key words: intracranian aneurysms, basilar artery apex, surgical treatment

Corresponding author: Acad. Prof. Leon Dãnãilã
Department of Vascular Neurosurgery
National Institute of Neurology and Neurovascular Diseases
Bucharest, Romania
E-mail: leondanaila@neuroch.info