



## LECTURE

# Management of symptomatic and incidental brain aneurysms

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### Abstract

Brain aneurysms represent a focal pathologic dilatation on the arterial wall of the cerebral vessels and affect 3 to 4% of the population worldwide. About 20 to 30% of those patients have multiple intracranial aneurysms. Saccular type accounts for 90% of them, with the most common locations being the anterior and posterior communicating arteries, internal carotid artery, the middle cerebral artery, and the basilar artery bifurcation.

Some medical conditions like the autosomal dominant polycystic kidney disease, Ehlers-Danlos syndrome type IV, coarctation of the aorta and microcephalic osteodysplastic primordial dwarfism are associated with aneurysms and can demand diagnostic screening.

Although most of them are incidentally discovered during workup, clinical findings such as headache, seizures and focal neurologic deficits can be present.

It is of extreme importance to understand their natural history and the factors that can influence the rupture rates. Smoking and hypertension are modifiable risk factors associated with aneurysm rupture. Nevertheless, the good news is that the overall annual rate of aneurysm rupture is considered to be low.

When dealing with a ruptured aneurysm, there is a well-defined approach, as the dreaded re-rupture demands a treatment intervention. The choice between endovascular or surgical treatment depends on several factors. Among the available literature, endovascular rescue seems to carry lower rates of morbidity and mortality in the follow up period and it is the treatment of choice for posterior circulation aneurysms. Aneurysm clipping is still the treatment of choice for MCA aneurysms.

On the other hand, saccular unruptured brain aneurysms are increasingly detected but the best management strategy is still under debate.

The PHASES score and UIATS scale represent two important tools for the decision.

Finding the best available plan for each patient should consider his life expectancy, risk factors for rupture, and expertise of the endovascular/surgical teams.

Previous subarachnoid haemorrhage, symptomatic aneurysms and aneurysm growth are listed as strong factors to support a preventive endovascular or surgical treatment. On the other hand, we should predict worse outcomes for older patients, posterior circulation location and large aneurysm size.

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