Posterior communicating artery aneurysm

General information

Posterior communicating artery aneurysm, may occur at either end of the posterior communicating artery; that is at the junction with the posterior cerebral artery, or more commonly at the junction with the carotid (typically points laterally, posteriorly, and inferiorly). May impinge on the third nerve in either case and cause third nerve palsy (ptosis, mydriasis, “down and out” deviation) that is not pupil sparing in 99% of cases. Surgical clipping may be more advantageous than endovascular coiling to treat oculomotor nerve palsies caused by p-comm aneurysms \(^1\) \(^2\).

Posterior communicating artery (PCOM) aneurysms is considered a internal carotid artery aneurysm.

Intracranial aneurysms arising from the posterior wall of the supraclinoind carotid artery are extremely common lesions. The aneurysm dilation typically occurs in immediate proximity to the origin of the posterior communicating artery and, less commonly, the anterior choroidal artery (AChA). Because of the increasingly widespread use of noninvasive neuroimaging methods to evaluate patients believed to harbor cerebral lesions, many of these carotid artery aneurysms are now documented in their unruptured state, prior to occurrence of subarachnoid hemorrhage. Based on these factors, the management of unruptured posterior carotid artery (PCA) wall aneurysms is an important element of any neurosurgical practice. Despite impressive recent advances in endovascular therapy, the placement of microsurgical clips to exclude aneurysms with preservation of all afferent and efferent vasculature remains the most efficacious and durable therapy. To date, an optimal outcome is only achieved when the neurosurgeon is able to combine systematic preoperative neurovascular assessment with meticulous operative technique.

Epidemiology

They are the second most common aneurysms overall (25% of all aneurysms) representing 50% of all internal carotid artery aneurysms \(^3\).

The next major branch of the internal carotid artery (ICA) is the posterior communicating artery, home to particularly notorious posterior communicating artery aneurysm, which seem to rupture with increased frequency for given size, when compared to other aneurysms of the ICA (ISUIA data). Next comes the anterior choroidal artery and its aneurysms, which can be mistaken for the PCOM type when the latter is hypo plastic.

Classification

1. May occur at either end of p-comm; that is at the junction with the PCA, or more commonly at the junction with internal carotid artery (typically points laterally, posteriorly, and inferiorly). May impinge on the third cranial nerve in either case and cause oculomotor nerve palsy (ptosis, mydriasis, “down and out” deviation) that, is not pupil sparing in 99% of cases.

2. Posterior communicating artery aneurysms associated with a fetal posterior communicating artery

3. True posterior communicating artery aneurysm.
4. Ruptured posterior communicating artery aneurysm.

**Clinical Features**

see Posterior communicating artery aneurysm oculomotor nerve palsy

Posterior communicating artery aneurysm and middle cerebral artery aneurysm.

**Diagnosis**

Posterior communicating artery aneurysm diagnosis.

**Treatment**

see Posterior communicating artery aneurysm treatment.

**Outcome**

Posterior communicating artery aneurysm outcome.

**Case series**

Posterior communicating artery aneurysm case series.

**Videos**

Surgery for Giant PCOM Aneurysms Video 1

Surgery for Giant PCOM Aneurysms Video 2
References

