

Posterior communicating artery aneurysm diagnosis

Symptoms suggestive of [Posterior communicating artery aneurysm](#) vary, but most sources agree that the presence of [oculomotor nerve palsy](#) and severe SAH-like headache are the most common ¹⁾ ²⁾.

Expert interpretation of modern noninvasive neuroimaging such as [Computed tomography angiography \(CTA\)](#) and [magnetic resonance angiography \(MRA\)](#), should detect nearly all aneurysms responsible for an isolated [third nerve palsy](#) ³⁾ ⁴⁾ ⁵⁾ ⁶⁾.

Whether a catheter angiogram should still be obtained in cases of isolated third nerve palsy with negative CTA or MRA remains a difficult decision ⁷⁾ ⁸⁾.

Although recent studies ⁹⁾ have reported a risk of neurologic complications close to zero for diagnostic cerebral angiographies performed within a high volume neuro-interventional practice, the risk of neurologic complications following catheter cerebral angiography was once between 0.9 and 4% ¹⁰⁾ and, therefore, algorithms trying to avoid routine catheter angiography, especially as a screening test, have been proposed in the past ¹¹⁾ ¹²⁾ ¹³⁾.

Recent publications have emphasized the importance of having presumed negative noninvasive vascular imaging studies reviewed by a skilled neuroradiologist before aneurysm is rejected as the cause of the third nerve palsy or before the patient undergoes catheter angiography ¹⁴⁾.

Angiographic considerations

[Vertebral artery \(VA\)](#) injection is necessary to help evaluate the [posterior communicating artery](#):

1. if the p-comm is patent: determine if there is a "[fetal circulation](#)" where the posterior circulation is fed only through the p-comm
2. determine if the [aneurysm](#) fills from VA injection

If additional views are needed to better demonstrate aneurysm

Try paraorbital oblique 55° away from injection side, center beam 1 cm posterior to inferior portion of lateral rim of ipsilateral orbit, orient x-ray tube 12° cephalad

One cannot accurately predict blood supply dominance of the [posterior cerebral artery](#) with CTA. Knowledge of the blood flow dominance is essential when clipping a posterior communicating artery aneurysm to avoid compromise in posterior circulation ¹⁵⁾.

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