Anterior communicating artery aneurysm surgery complications

Levator palpebrae superioris muscle paralysis

Flap infection

Vasospasm

Hydrocephalus

Intracranial hypertension

Vessel occlusion

Pneumonia

Urinary tract infection

Sepsis

Deep venous thrombosis

Acute respiratory distress syndrome

Endocarditis

Pulmonary embolism [1].

Brain shifts following microsurgical clip ligation of anterior communicating artery aneurysms can lead to mechanical compression of the optic nerve by the clip. Recognition of this condition and early repositioning of clips can lead to reversal of vision loss.

Linzey et al., identified 3 patients with an afferent pupillary defect following microsurgical clipping of ACoA aneurysms. Different treatment options were used for each patient. All patients underwent reexploration, and the aneurysm clips were repositioned to prevent clip-related compression of the optic nerve. Near-complete restoration of vision was achieved at the last clinic follow-up visit in all 3 patients. Clip ligation of ACoA aneurysms has the potential to cause clip-related compression of the optic nerve. Postoperative visual examination is of utmost importance, and if any changes are discovered, reexploration should be considered as repositioning of the clips may lead to resolution of visual deficit [2].

Cognitive deficits

In a retrospective follow-up study covering a time period of four years 18 patients operated upon early for an aneurysm of the anterior communicating artery (ACoA) and a control group of 21 patients with aneurysmal subarachnoid haemorrhage (SAH) from other sources than ACoA aneurysm and 9 patients with SAH of nonaneurysmal origin were subjected to neuropsychological examination. Both groups were comparable in their neurological condition on admission and in the severity of bleeding

seen on CT-scan. Testing included memory functions, concentration, logical and spatial thinking, a Stroop-test, an aphasia screening test and a complex choice reaction task. Patients with SAH of a ruptured ACoA aneurysm did not differ significantly from the control group in any of the tests used. But there was a trend for the ACoA patients to have more memory problems than the patients with SAH of other origins. On the other hand the patients in the control group with aneurysmal SAH of other locations and with non-aneurysmal SAH had not significantly more problems with concentration and aphasia than the patients with ruptured ACoA aneurysm. These results, which differ from the common opinion of frequent occurrence of memory deficits in ACoA aneurysms are interpreted as a consequence of the changes in improved pre-, intra- and postoperative management in modern neurosurgery [3].

Infarction of the perforators of the anterior communicating artery

Infarction of the perforators of the anterior communicating artery

Anosmia after anterior communicating artery aneurysm surgery

Anosmia after anterior communicating artery aneurysm surgery

1)
Andaluz N, Zuccarello M. Anterior Communicating Artery Aneurysm Surgery through the Orbitopterional Approach: Long-Term Follow-Up in a Series of 75 Consecutive Patients. Skull Base. 2008 Jul;18(4):265-74. doi: 10.1055/s-2008-1058367. PubMed PMID: 19119341; PubMed Central PMCID: PMC2467483.
2)
Linzey JR, Chen KS, Savastano L, Thompson BG, Pandey AS. Optic neuropathy after anterior communicating artery aneurysm clipping: 3 cases and techniques to address a correctable pitfall. J Neurosurg. 2018 Jun;128(6):1808-1812. doi: 10.3171/2017.2.JNS162654. Epub 2017 Aug 25. PubMed PMID: 28841123.
3)
Hütter BO, Gilsbach JM. Cognitive deficits after rupture and early repair of anterior communicating artery aneurysms. Acta Neurochir (Wien). 1992;116(1):6-13. PubMed PMID: 1615771.