Cerebral cavernous malformation of the occipital lobe

Cavernomas in the occipital lobe are relatively rare. Because of the proximity to the visual cortex and incoming subcortical tracts, microsurgical removal of occipital cavernomas may be associated with a risk of visual field defects.

Of 390 consecutive patients with cavernomas who were treated at Helsinki University Central Hospital between 1980 and 2011, 19 (5%) had occipital cavernomas. Sixteen patients (4%) were surgically treated and are included in this study. The median age was 39 years (range 3-59 years). Seven patients (56%) suffered from hemorrhage preoperatively, 5 (31%) presented with visual field deficits, 11 (69%) suffered from seizures, and 4 (25%) had multiple cavernomas. Surgery was indicated for progressive neurological deterioration. The median follow-up after surgery was 5.25 years (range 0.5-14 years).

All patients underwent thorough neuroophthalmological assessment to determine visual outcome after surgery. Visual fields were classified as normal, mild homonymous visual field loss (not disturbing the patient, driving allowed), moderate homonymous visual field loss (disturbing the patient, driving prohibited), and severe visual field loss (total homonymous hemianopia or total homonymous quadrantanopia). At the last follow-up, 4 patients (25%) had normal visual fields, 6 (38%) had a mild visual field deficit, 1 (6%) complained of moderate visual field impairment, and 5 (31%) had severe homonymous visual field loss. Cavernomas seated deeper than 2 cm from the pial surface carried a 4.4-fold risk of postoperative visual field deficit relative to superficial ones ($p = 0.034$). Six (55%) of the 11 patients presenting with seizures were seizure-free postoperatively. Eleven (69%) of 16 patients had no disability during the long-term follow-up.

Surgical removal of occipital cavernomas may carry a significant risk of postoperative visual field deficit, and the risk is even higher for deeper lesions. Seizure outcome after removal of these cavernomas appeared to be worse than that after removal in other supratentorial locations. This should be taken into account during preoperative planning [1)].

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Kivelev J, Koskela E, Setälä K, Niemelä M, Hernesniemi J. Long-term visual outcome after microsurgical removal of occipital lobe cavernomas. J Neurosurg. 2012 Aug;117(2):295-301. doi: 10.3171/2012.5.JNS112102. Epub 2012 Jun 15. PubMed PMID: 22702480.