# Hypothalamic cavernous malformation

see also Optic chiasma cavernous malformation.

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There remains a paucity of literature on hypothalamic cavernous malformations [1) 2)].

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Cavernous malformations of the optic pathway and hypothalamus are extremely rare. They represent 1% or less of all cavernous malformations. In the study of 65 cases of cavernous malformation involving the optic pathway and the hypothalamus by Liu et al., only five were found to be in the hypothalamus and none of these patients presented with psychological complaints [3)]

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Hypothalamic cavernomas commonly present with headache and visual disturbance, [4)] and in only one case, the patient presented with a history of memory loss [5)].

## Case series

Khahera et al. presented the largest series of HCMs to date and review the literature to gain additional insight into this rare disease subset.

A prospectively managed database was retrospectively reviewed for patients diagnosed with symptomatic hypothalamic cavernous malformations. and treated surgically between 1987 and 2019. Data gathered included demographics, presenting signs, radiological measurements, surgical approach, and postoperative events. Functional outcome was measured using the modified Rankin Scale (mRS) and Glasgow Outcome Scale-Extended (GOSE) pre- and postoperatively. A PRISMA guideline systematic review of HCM in the literature was performed.

This cohort study consisted of 12 patients with symptomatic, and radiographically confirmed, HCM treated with microsurgery by the senior author (G.K.S.). An additional 16 surgically or conservatively managed patients were also identified from the literature, and the authors analyzed the data of all 28 patients (with 54% of patients being male; mean age 39 ± 16 years, range 10-68 years). Patients harboring HCMs most commonly presented with headache (16/28, 57%), short-term memory impairment (11/28, 39%), and gait disturbance (8/28, 32%). Radiographically, lesions most commonly involved the mammillary region (18/23, 78%), the tuberal/infundibulum region (13/23, 57%), and the preoptic/lamina terminalis region (12/23, 52%), with a mean diameter of 2.5 ± 1.4 cm (range 0.8-7 cm) at presentation. Acute hemorrhage was identified in 96% (23/24) of patients on presentation, with 96% (23/24) intraparenchymal and 29% (7/24) intraventricular. Of 24 patients who were managed surgically, gross-total resection (GTR) was achieved in 88% (21/24) of cases. There were no reports of perioperative infarction or mortality. With a mean follow-up period of 41 months (range 0.5-309 months), 77% (20/26) of patients experienced functional improvement, while 12% (3/26) had no change, and 12% (3/26) experienced increased disability. In our cohort of 12 patients, 83% (10/12) continued to report symptoms at the last follow-up (mean 4.8 years, range 0.1-25.7 years). However,

there was a significant improvement in mRS score noted after surgery (mean 1.4 vs 3.1, p = 0.0026) and a trend toward improvement in GOSE score (mean 6.3 vs 5.1, p = 0.09).

Hemorrhage from HCMs can cause a symptomatic mass effect on adjacent eloquent structures. While patients are unlikely to be deficit free following surgery, GTR allows for functional improvement and reduces recurrent hemorrhage rates. Microsurgery remains a viable option for symptomatic HCMs in experienced hands [6].

## Case reports

A 34-year-old male who presented with complaints of recent memory loss and vomiting. On magnetic resonance imaging with gradient sequences and contrast, a diagnosis of hypothalamic cavernoma was suggested. Excision of lesion was performed by a right parasagittal pericoronal craniotomy via transcallosal approach. Intraoperative findings and histopathology examination corroborated the diagnosis. The uniqueness of this case report is in the susceptibility-weighted sequence which led to the radiological diagnosis [7].

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A 52-year-old man who presented with behavior and memory disturbance attacks. He had a CA of the hypothalamus as revealed by magnetic resonance imaging (MRI). They discuss the role and importance of imaging in such scenario and also the differential diagnoses of this rare entity [8].

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