

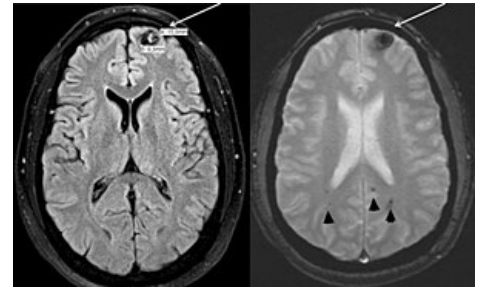
Cavernous malformation

Cavernous malformation (also cavernoma , cavernous angioma or hemangioma ; CM) is a designation for a vascular malformation characterized by the accumulation of widely dilated blood vessels. Compared to AVMs , blood flow is slowed in CMs due to a different morphological arrangement, and CMs are (in most cases) not visualized on DSA . There are two forms of CM: sporadic and familial (AD disease). ^[1]

Outside the CNS , CMs can occur in any organ, with one of the most affected locations besides the brain and spinal cord being the liver. In the brain, CMs occur supratentorially in 65–80% of cases. Below, this article deals only with cavernous malformations of the CNS . ^[2] V mozku se CM vyskytují v 65–80 % případech supratentoriálně ^[3]. Níže se tento článek věnuje pouze kavernózním malformacím CNS.

Diagnostics

- **MRI** – plays the most important role, clearly the most sensitive (in the CNS , CM is often surrounded by hemosiderin and gliosis, edemas etc. can also be visualized);
- **CT** – most CM cannot be visualized, it is rather used to visualize associated pathologies (hydrocephalus , SAK , etc., on the basis of which an MRI is usually indicated);
- **DSA** – is not sensitive enough to clearly display CM, but it is a suitable display, for example, of frequently associated developmental venous anomalies. ^[4]



MRI – mnohočetné cerebrální kavernózní malformace

Symptomatology

It primarily depends on the location, typically it is:

- **headache**,
- in the case of lobar CM, **epileptic seizures** are relatively common,
- **neurological deficits** ^[5].

File:Cavernoma
mesencephalon.jpg
MRI – kavernózní
malformace
mesencephala

approximately half of the patients are asymptomatic . Therefore, even the clear epidemiology of this vascular malformation is not precisely determined, many patients are not diagnosed. ^{[6][7]}

Therapy

Here too, as in the case of AVMs , we encounter multimodality treatment. We decide between observation, surgical resection and radiosurgery (due to the nature of the malformation, endovascular treatment is not applicable)..

1. **Observation** – indicated primarily for incidentally diagnosed (most often asymptomatic) CM, which are not risky due to their location, bleeding or size, or in cases that are too risky for interventional methods.
2. **Surgical resection** – indicated for progression of symptoms and hemorrhage from CM, in which the risk of surgical complications is not high. It is a very effective treatment for complete resection (with partial resection, the patient is at risk of postoperative hemorrhage from the residue).
3. **Radiosurgery** (most often gamma knife) – especially for eloquently deposited CM (thalamus, basal ganglia, capsula interna aj.), is primarily indicated for smaller lesions with a lower risk of bleeding .

Complications

The primary complication of the natural course of the disease is **bleeding** – unlike AVM, bleeding from CM typically does not have a high mortality rate , it can also be asymptomatic. At the same time, even a single bleeding (not to mention rebleeding) can cause persistent morbidity. Therefore, already after the first hemorrhage, interventional treatment begins to be considered (on the basis of localization, size of CM, etc.). ^{[8][9]}

Surgical resection entails a range of complications, which differ not only based on the patient's predispositions, but also on the basis of the CM itself – its localization, etc. However, in general, it can be said that surgically treated CMs in the brainstem show a greater risk of neurological deficits compared to those located lobarly. ^[10]

The most common complication of radiosurgical treatment is the bleeding itself and its consequences, as the effect of radiation does not occur immediately. A typical complication for this type of treatment are the so-called **radiation effects**, i.e. complications such as nausea, necrosis, etc. ^{[11][12]}

Links

- ws:Kavernózní malformace

Related Articles

- Arteriovenous malformation
- Hemorrhagic strokes
- Bleeding in the internal capsules
- Subarachnoid hemorrhage
- Bleeding
- Gamma knife

External links

- Cerebrální kavernózní malformace (<https://radiopaedia.org/articles/cerebral-cavernous-venous-malformation>)
- Spinální kavernózní malformace (<https://radiopaedia.org/articles/spinal-cord-cavernous-malformation?lang=us>)

Použitá literatura

-
-

References

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.

Kategorie:Neurochirurgie Kategorie:Neurologie Kategorie:Patologie Kategorie:Chirurgie