

Hemangioblastoma diagnosis

Radiographic features

Within the CNS, the most common site is the posterior fossa where the tumor often forms a solitary nodule in the wall of a glial-lined cyst ^{1) 2)}. Typically **hemangioblastomas** (60% of cases) are sharply demarcated homogeneous masses composed of cyst with non-enhancing walls, except for a mural nodule which vividly enhances and often has prominent serpentine flow voids ³⁾.

Not infrequently the mural nodule itself has cystic spaces within it. The solid nodules are commonly seen abutting the pia mater.

In the remaining 40%, the tumour is solid with no cystic cavity ⁴⁾.

CT

The mural nodule is isodense to brain on non-contrast scans with fluid density surrounding cyst bright enhancement of the nodule is demonstrated with contrast the cyst walls do not usually enhance calcification is not a feature.

MRI

see [Hemangioblastoma MRI](#).

Angiography

Enlarged feeding arteries and often dilated draining veins are demonstrated, with a dense tumour blush centrally ⁵⁾

Cerebral angiography should be performed to rule out vascular abnormalities such as cerebral aneurysms adjacent to the tumor in patients with hemangioblastoma who present with intracranial hemorrhage.

Simultaneous 3D visualization of feeding arteries, draining veins, and surrounding structures is needed. A study evaluated the usefulness of high-resolution 3D multifusion medical imaging (hr-3DMMI) for preoperative planning of hemangioblastoma. The hr-3DMMI combined MRI, MR angiography, thin-slice CT, and 3D rotated angiography. Surface rendering was mainly used for the creation of hr-3DMMI using multiple thresholds to create 3D models, and processing took approximately 3-5 hours. This hr-3DMMI technique was used in 5 patients for preoperative planning and the imaging findings were compared with the operative findings. Hr-3DMMI could simulate the whole 3D tumor as a unique sphere and show the precise penetration points of both feeding arteries and draining veins with the same spatial relationships as the original tumor. All feeding arteries and draining veins were found intraoperatively at the same position as estimated preoperatively, and were occluded as planned preoperatively. This hr-3DMMI technique could demonstrate the precise locations of feeding arteries and draining veins preoperatively and estimate the appropriate route for resection of the tumor. Hr-3DMMI is expected to be a very useful support tool for surgery of

hemangioblastoma ⁶⁾.

¹⁾

Yachnis A. T. Capillary hemangioblastoma. In: McLendon R. E., Rosenblum M., Bigner D. D., editors. Russell and Rubinstein's Pathology of Tumors of the Nervous System. 7th. New York, NY, USA: Oxford University Press; 2006. pp. 489-507.

²⁾

Louis D. N., Ohgaki H., Wiestler O. D., Cavenee W. K. WHO Classification of Tumours of the Central Nervous System. Lyon, France: International Agency for Research; 2007.

³⁾

Bonneville F, Sarrazin JL, Marsot-Dupuch K, Iffenecker C, Cordoliani YS, Doyon D, Bonneville JF. Unusual lesions of the cerebellopontine angle: a segmental approach. Radiographics. 2001 Mar-Apr;21(2):419-38. PubMed PMID: 11259705.

⁴⁾ ⁵⁾

Ho VB, Smirniotopoulos JG, Murphy FM, Rushing EJ. Radiologic-pathologic correlation: hemangioblastoma. AJNR Am J Neuroradiol. 1992 Sep-Oct;13(5):1343-52. PubMed PMID: 1414827.

⁶⁾

Yoshino M, Nakatomi H, Kin T, Saito T, Shono N, Nomura S, Nakagawa D, Takayanagi S, Imai H, Oyama H, Saito N. Usefulness of high-resolution 3D multifusion medical imaging for preoperative planning in patients with posterior fossa hemangioblastoma: technical note. J Neurosurg. 2016 Aug 26:1-9. [Epub ahead of print] PubMed PMID: 27564468.

From:

<https://operativeneurosurgery.com/> - **Operative Neurosurgery**

Permanent link:

https://operativeneurosurgery.com/doku.php?id=hemangioblastoma_diagnosis

Last update: **2020/04/22 10:53**

