Interventional and surgical therapy of temporal high-flow AV malformation- overtreatment or state of the art?

R. Qorri¹, H. Mohammad¹, D. Mucha², M. von Laffert³, M. Gerrensen¹

¹ Clinic for Oral and Maxillofacial Surgery, Plastic and Aesthetic Surgery, HBK Zwickau, ² Institute for Diagnostic and Interventional Radiology and Neuroradiology, Heinrich-Braun-Klinikum gemeinnützige GmbH, Zwickau ³ Institute of Pathology, University Hospital Leipzig

Arteriovenous malformations (AVM) are congenital vascular deformities growing in the brain tissue or its immediate vicinity that are able to infiltrate their environment. They consist of a nidus into which feeding arterial vessels open, whereas venous vessels lead out of the nidus. However, because AVM often is a confusing tangle, it is difficult to distinguish the single elements. By definition, the nidus is where the arteries have a short-circuit connection with veins without an intervening capillary bed. This results in high blood pressure and flow in the veins, which may be dilated and perforate. If an AVM bleeds spontaneously, it may become "symptomatic," i.e., cause discomfort. Estimating the likelihood of bleeding from AVM is nearly impossible for individual cases; overall, the annual incidence of bleeding is thought to be between 1 - 4%.

In the present case, we report on a 70-year-old patient with an AV malformation of the temporal region on the left who was presented to our clinic on a consultative basis in July 2022 due to a left jugular vein inflow congestion that had been progressive for about three years with backflow into the left temporal region. Furthermore, the patient complained of repeated flow noises with tinnitus occurring under resting conditions and of a buzzing on the left temporal side as well as pain when touching the clinically slightly raised soft tissue alteration. The CT scan of the supra-aortic vessels showed marked extra-cranial vascular ectasia left temporal with contrast of the external and internal jugular veins already in the arterial phase, primarily with high-flow AV fistula. Cerebral panangiography was then performed for further diagnosis. This confirmed the presence of an extra-cranial galeal arteriovenous high-flow malformation with arterial supply mainly from branches of the superficial temporal artery and venous drainage mainly via the left external jugular vein.

The AVM was first interventionally eliminated by our neuroradiologists performing a combined transvenous-transarterial intervention. One week later, no relevant intraoperative bleeding occurred. According to current therapeutic standards, larger AVM are usually first embolized via catheter and are then completely surgically removed in the further course. In our experience, an interval of one week between embolization and surgery is optimal.

Contact: Dr. R. Qorri, Clinic for Oral and Maxillofacial Surgery, Plastic and Aesthetic Surgery, HBK Zwickau site (Head Physician: Priv.-Doz. Dr. M. Gerrensen)
E-Mail: rezart.qorri@hbk-zwickau.de

Literatur: