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Abstract

Resection of brain arteriovenous malformation is challenging particularly if the feeder arteries and draining vein are not directly visible on the surface. Indocyanine green video angiography can assist detection of the connecting point of the draining vein with the superficial vein and can thus localise the cortical entry point for AVM resection. Here, we present a case of a 27-year-old man with headache. CT scan showed right occipital atypical bleeding. CTA and DSA confirmed the cortical AVM fed by the posterior cerebral artery (PCA) branches. We decided on surgical treatment because the small PCA feeders were not easily accessible for endovascular treatment. We used an OPMI PENTERO 900 microscope (Carl Zeiss, Germany) to perform microsurgical resection of AVM. We present an illustrative video showing the surgical approach, microsurgical anatomy, and technical aspects of the utility of video ICG in deep cortical small AVM surgery. Video ICG assisted detection of the cortical arterialised draining vein that was anastomosed with a sprawled superficial vein. This enabled a customised approach for the AVM resection. Post-surgical video ICG showed normalised flow in the superficial vein supporting the complete resection of AVM. Indocyanine angiography is potentially helpful for detecting the cortical entry point of a deep draining vein with a sprawled superficial vein. ICG should be used as an adjunct to better understand the microvascular anatomy that may aid decision making during AVM surgery.

Key words

Indocyanine angiography, Arteriovenous malformation, Surgical treatment, Draining vein

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To
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Subject: Abbreviations for manuscript entitled **Utility of video ICG to detect the cortical entry point of a draining vein with a superficial vein during AVM surgery**

Video-ICG= Video Indocyanin angiography
AVM= Arteriovenous malformation
CT= Computer tomography
CTA= CT angiography
DSA= Digital subtraction angiography