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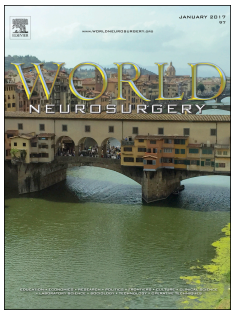

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Microsurgical disconnection of a ruptured intracranial pial arteriovenous fistula guided by indocyanine green video-angiography

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Key words: brain vascular malformation, pial arteriovenous fistula, indocyanine green, video-angiography.

Intracranial arteriovenous fistulas, rare causes of spontaneous intracerebral bleeding, are direct communications between an arterial feeder and an arterialized vein that drains also normal brain. Arteriovenous disconnection is the only effective treatment for this type of vascular malformation, which is often reached microsurgically due to the difficult endovascular access. Intraoperative indocyanine green video-angiography (IGC-VA) is a valuable help in identifying the arterialized draining vein and its direct communication with the arterial feeder and in confirming real time the interruption of the fistula.

We describe the case of a 46 years old man presenting with a sudden onset of headache, left arm motor and sensory deficit associated with a fronto-parietal hematoma evacuated one week earlier in another institution.

Digital subtraction angiography showed a direct communication between an anterior parietal branch of the right middle cerebral artery and a parietal vein. Given the difficulty to reach endovascularly the point of fistula because of the small caliber and tortuosity of the arterial feeder and the short and relatively rapid flow through the arteriovenous communication, we decided to proceed with the microsurgical treatment. Under intraoperative neurophysiological monitoring the fistula was located with the aid of ICG-VA and interrupted. Both control ICG-VA and postoperative angiogram confirmed the resolution of the fistula. At a 3-month follow up the patient had a complete neurological recovery.

indocyanine green video-angiography (IGC-VA)

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I, Francesco Signorelli, corresponding author, certify that there is no actual or potential conflict of interest in relation to this article.

Francesco Signorelli, MD, MSc, on behalf of all authors Date: March 4, 2019