

Awake surgery for arteriovenous malformation

One of the pressing constraints in the [cerebral arteriovenous malformation treatment](#) is the potential development of new neurological deficits, mainly when the AVM is in an eloquent area. The risk of ischemia when an “en passage” arterial supply is present is not negligible. In this regard, awake surgery holds promise in increasing the safety of low-grade AVMs resection.

Pérez-Alfayate et al. conducted a pilot trial on 3 patients with [low-grade cerebral arteriovenous malformations](#) affecting [speech areas](#) to evaluate the safety of [awake craniotomy](#). Each [feeder](#) was temporarily [clipped](#) before the section. Also, they performed a systematic review to analyze the existing data about the impact of awake surgery in eloquent AVM resection.

None of the 3 patients presented with neurological deficits after the procedure. Awake craniotomy was useful in one case, as it allowed the detection of speech arrest during the temporal clipping of one of the feeders. This vessel was identified as an “en passage” vessel, closer to the nidus. The second attempt revealed the feeder of the AVM which was sectioned. Systematic review yielded 7 studies meeting our inclusion criteria. Twenty-six out of 33 patients included in these studies presented with AVM affecting speech area. Only 2 studies included the motor evoked potentials, 6 studies used direct cortical and subcortical stimulation. In all the studies asleep-awake-asleep (AAA) technique was used.

Awake craniotomies are safe [procedures](#) and may be helpful in avoiding ischemic complications in low-grade AVMs, either affecting [eloquent](#) areas and/or when “en passage” feeders are present ¹⁾.

1)

Pérez-Alfayate R, Torregrossa F, Rey-Picazo J, Matías-Guiu J, Sallabanda Diaz K, Grasso G. Pilot trial on awake surgery for low grade AVMs in speech area and systematic review of the literature. World Neurosurg. 2024 Jun 8:S1878-8750(24)00960-4. doi: 10.1016/j.wneu.2024.06.012. Epub ahead of print. PMID: 38857871.

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