

HEADACHE OUTCOME AFTER MIDDLE-MENINGEAL ARTERY EMBOLIZATION IN SUBDURAL HEMATOMA

F. Innocenti[1|3], M. Romozzi[1|3], M. Palermo, F. Tosto[4], C. Vollono[1|3], P. Calabresi, H. Yuan, L. Francesco Iannone, F. Maria Polli, F. Signorelli, I. Valente, G. Garignano, A. Pedicelli

[1]Neurology Unit, Department of Neurosciences, Sense Organs and Thorax, Fondazione Policlinico Universitario "A. Gemelli" IRCCS, Italy; [2]Neurosurgery Unit, Department of Neurosciences, Sense Organs and Thorax, Fondazione Policlinico Universitario A. Gemelli IRCCS, Italy; [3]Department of Neuroscience, Università Cattolica del Sacro Cuore, Rome, Italy; [4]Department of Neuroscience, Giovanni Paolo II Hospital, Catanzaro, Italy

Background. Middle meningeal artery embolization (MMAE) has recently emerged as a promising adjunctive or alternative therapeutic strategy for chronic subdural hematoma (cSDH). Yet, beyond its role in cSDH, the MMA is also implicated in headache pathophysiology. Although MMA vasodilation alone does not fully explain migraine pain, modulation of dural vascular signaling may play a role in the pathogenesis of migraine.

Methods. We conducted a retrospective study including patients who underwent MMAE procedure pre- or post- surgical treatment for cSDH between December 2024 and February 2026.

Results. After applying the inclusion and exclusion criteria, a total of 24 patients (16.55%) out of 145 who underwent MMA embolization procedure for cSDH were included. Among these, 10/24 patients (41.7%) reported headache prior to treatment, whereas 14/24 (58.3%) were headache-free pre-procedure. Among patients with pre-existing headache, 5/10 (50.0%) had migraine and 4/10 (40.0%) had tension-type headache, while one patient presented with headache secondary to the cSDH; 2/5 patients with migraine exhibited a marked improvement of their primary headache disorder after the procedure (these cases were described in detail) and 1/4 with tension-type headache.

Conclusions. Although MMA embolization cannot be considered a treatment for primary headache disorders, the improvement observed in some patients with migraine or tension-type headache in our series may reflect modulation of shared meningeal mechanisms. Prospective studies will be necessary to clarify whether MMA embolization may influence meningeal nociceptive pathways beyond its established role in preventing hematoma recurrence and could be considered as an option for refractory migraine.