Deep arteriovenous malformation

The management of arteriovenous malformations (AVMs) in the basal ganglia, insula, and thalamus is demanding for all treatment modalities.

A cohort of 22 patients with AVMs located in the basal ganglia, thalamus, and insula who underwent embolization between January 2008 and December 2013.

Eighteen of 22 (82%) patients had anatomic exclusion. The mean size was 2.98 ± 1.28 cm, and the mean number of sessions was 2.1 per patient. Most patients presented with hemorrhage (82%, n = 18), and 3 (14%) patients were in a deteriorated neurological status (modified Rankin Scale >2) at presentation. Sixty-eight percent of ruptured AVMs had size ≤3 cm. A single transarterial approach was performed in 9 (41%) cases, double catheterization was used in 4 (18%), and the transvenous approach was required in 8 (36%) cases. Procedure-related complications were registered in 3 (14%) cases. One death was associated with treatment, and complementary radiosurgery was required in 2 (9%) patients.

Embolization therapy appears to be safe and potentially curative for certain deep AVMs. The results demonstrate a high percentage of anatomic obliteration with rates of complications that may approach radiosurgery profile. In particular, embolization as stand-alone therapy is most suitable to deep AVMs with small nidus size (≤3 cm) and/or associated with single venous drainage in which microsurgery might not be indicated [1].

1)
Mendes GA, Silveira EP, Caire F, Boncoeur Martel MP, Saleme S, Iosif C, Mounayer C. Endovascular Management of Deep Arteriovenous Malformations: Single Institution Experience in 22 Consecutive Patients. Neurosurgery. 2016 Jan;78(1):34-41. doi: 10.1227/NEU.0000000000000982. PubMed PMID: 26317676.