

# Pure arterial malformation

Over the last half century, there have been isolated case reports of purely arterial malformations. In this study, the authors report a consecutive series of patients with pure arterial malformations, emphasizing the clinical and radiological features of these lesions. **METHODS** Pure arterial malformations were defined as dilated, overlapping, and tortuous arteries with a coil-like appearance and/or a mass of arterial loops without any associated venous component. Demographic characteristics of the patients, cardiovascular risk factors, presentation, radiological characteristics, and follow-up data were collected. Primary outcomes were new neurological symptoms including disability, stroke, and hemorrhage. **RESULTS** Twelve patients meeting the criteria were identified. Ten patients were female (83.3%) and 2 were male (16.6%). Their mean age at diagnosis was  $26.2 \pm 11.6$  years. The most common imaging indication was headache (7 patients [58.3%]). In 3 cases the pure arterial malformation involved the anterior cerebral arteries (25.0%); in 4 cases the posterior communicating artery/posterior cerebral artery (33.3%); in 2 cases the middle cerebral artery (16.6%); and in 1 case each, the superior cerebellar artery, basilar artery/anterior inferior cerebellar artery, and posterior inferior cerebellar artery. The mean maximum diameter of the malformations was  $7.2 \pm 5.0$  mm (range 3-16 mm). Four lesions had focal aneurysms associated with the pure arterial malformation, and 5 were partially calcified. In no cases was there associated intracranial hemorrhage or infarction. One patient underwent treatment for the pure arterial malformation. All 12 patients had follow-up (mean 29 months, median 19 months), and there were no cases of disability, stroke, or hemorrhage. **CONCLUSIONS** Pure arterial malformations are rare lesions that are often detected incidentally and probably have a benign natural history. These lesions can affect any of the intracranial arteries and are likely best managed conservatively <sup>1)</sup>.

<sup>1)</sup>

Brinjikji W, Cloft HJ, Flemming KD, Comelli S, Lanzino G. Pure arterial malformations. J Neurosurg. 2018 Jul;129(1):91-99. doi: 10.3171/2017.2.JNS1744. Epub 2017 Sep 29. PubMed PMID: 28960150.

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