

Extracranial Arteriovenous Malformation

see [Scalp arteriovenous malformation](#)

Head and neck extracranial [arteriovenous malformations](#) (AVMs) are rare pathological conditions which pose diagnostic and reconstruction challenges. Stereotactic radiosurgery (SRS) is nowadays an established treatment method for [brain arteriovenous malformations](#), with high obliteration and low complication rates. Dedeciusova et al. described the first report of head extracranial AVMs successfully treated by [Gamma Knife](#) (GK) as a [retrospective](#) historical [cohort](#).

Over a 9-year period, 2 cases of extracranial [AVMs](#) were treated by GK [Perfexion](#) ([Elekta](#) Instruments AB, Stockholm, Sweden) at a single institution. A stereotactic frame and multimodal imaging, including digital subtraction angiography (DSA), were used. The prescribed dose was 24 Gy at the 50% isodose line.

The first case was of a patient with pulsating tinnitus and left superficial parotido-condylar AVM. Embolization achieved partial obliteration. [Tinnitus](#) disappeared during the following 6 months after GK. The second case was a patient with repetitive gingival hemorrhages and right superior maxillary AVM, fed by the right internal maxillary and facial arteries. Embolization achieved partial obliteration with recurrence of symptoms. GK was further performed. DSA confirmed complete obliteration in both patients.

Conclusions: Single-fraction GK radiosurgery appears to be safe and effective for extracranial AVMs. We recommend prescribing doses that are comparable to the ones used for brain AVMs (i.e., 24 Gy). A stereotactic frame is an important tool to ensure higher accuracy in the context of these particular locations. However, in selected cases, a mask could be applied either for single fraction purposes (if in a non-mobile location) or for hypofractionation, in case of larger volumes. These findings should be validated in larger cohorts, inclusively in terms of dose prescription ¹⁾

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Dedeciusova M, Tuleasca C, Hajdu SD, Schiappacasse L, Patin D, Levivier M. Stereotactic Gamma Knife Radiosurgery for Extracranial Arteriovenous Malformations [published online ahead of print, 2020 Sep 9]. *Stereotact Funct Neurosurg*. 2020;1-8. doi:10.1159/000509753

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Last update: **2024/06/07 03:00**

