Spinal Vascular Malformation Treatment

Type I (dural AVMs) from the American English French Connection Classification: usually require treatment. Usually amenable to endovascular techniques using glue, in which case the proximal vein must be taken as well. If you don't completely eliminate a dural fistula (spinal or intracranial) it will come back!

see Spinal dural arteriovenous fistula treatment.

Type II (spinal glomus AVMs): may be amenable to interventional neuroradiologic procedures including embolization, [1] especially type IIA (single feeder). However recurrence may be higher with endovascular treatment than surgery, and surgery is often preferred for Type IIB (≥2 feeders). Surgical strategy: similar to intracranial AVMs, except that the parenchyma cannot be retracted, bleeding is rarely life-threatening, and arteries of passage must be preserved to avoid devastating deficits. Intraoperative ICG angio is often helpful. The nidus is compact, and the hemosiderin ring around the nidus on MRI often represents a plane that can be exploited.

Type III (juvenile spinal AVMs): the natural history is probably better than the prognosis with any type of treatment.

Type IV (perimedullary fistulae): suggested management:

Suggested management for Type IV arteriovenous fistulae [2]

Subtype I difficult;? reliability of MRI (due to inaccuracy, do not delay angiogram to get MRA, etc.); difficult easy on filum terminale; difficult on tomomyelography; conus medullaris angiotomomyelography.

Subtype II, diagnosis: easy: MRI or myelography, embolization: incomplete occlusion, surgery on posterolateral AVFs

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Subtype III diagnosis easy: MRI or myelography, embolization: effective, surgery difficult dangerous.

Diagnosis and treatment of spinal dural arteriovenous fistula (type I) as well as spinal arteriovenous malformations (type II-V) ideally require a close co-operation between neurosurgeons and neuroradiologists. Surgery can, in general, be considered as curative. Endovascular therapy of arteriovenous malformations results in the reduction of size and concomitant hemodynamic effects. A curative approach is generally not possible. Particularly in cases of lumbosacral and craniosacral

arteriovenous fistulas the interventional procedure provides advantages. Treatment of spinal cavernomas nowadays consists of neurosurgical approaches exclusively. The significance of radiosurgical therapy, especially with the CyberKnife, remains indistinct. Today, interdisciplinary neurosurgical and neuroradiological co-operation in specialized centers allows most spinal vascular malformations to be diagnosed at an early stage and to be treated with satisfying results [3].

Spinal arteriovenous malformation surgery

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References

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