

Advanced Imaging and Endovascular Treatment for spinal AV shunting

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Purpose:

For safe and effective endovascular treatment for spinal AV shunting, precise analysis of the vascular anatomy of the lesion is critical. We discuss the efficacy of advanced imaging modality for this purpose.

Methods:

The current angiographic machine can perform high-quality 2D angiography and 3-dimensional rotational angiography (3DRA), providing volume rendering images and MIP slab images, enabling precise analysis of the vascular structures. In addition, thin slice MIP/MPR images of 3DRA fused with heavily T2 weighted volume data of MRI in axial, sagittal, coronal, and any desired slice angle can provide high-resolution images, which help identify shunt points in relation to the surrounding anatomical structures.

Results:

We are presenting representative cases, including intradural, dural, and epidural AV shunts analyzed with these advanced imaging modalities, and also demonstrate endovascular treatment of these diseases using the result of these analyses. Especially for spinal dural AV fistulas, analysis of the pedicle harboring the feeders to the AV shunts using MIP images of the 3DRA is mandatory before endovascular treatment to evaluate the existence of a spinal cord artery.

Conclusions:

Precise analysis the spinal vascular AV shunts using advanced imaging techniques helps analyze vascular anatomy and plan the strategy for endovascular treatment.