Spinal dural arteriovenous fistula differential diagnosis

Clinical differential diagnosis of the rather unspecific neurologic symptoms is manifold, including polyneuropathy, tumor, or degenerative disc diseases [1].

It, therefore, is not surprising that patients with SDAVF see orthopedic surgeons, urologists (urinary retention being misinterpreted as being related to prostrate hypertrophy) [2] or psychologists (erectile dysfunction) [3] before the neurologist. From an imaging point of view, the MR imaging findings of cord edema together with perimedullary dilated vessels without any intramedullary nidus of vessels are typical for an SDAVF, and the only viable imaging differential diagnosis is another type of spinal vascular malformation. An SDAVF that drains solely into the anterior spinal veins may go along with cord hypersignal on T2 only because the anterior spinal veins are located subpial and may, therefore, not be visualized as being dilated [4]. In these cases, a glioma (especially when contrast uptake is present) [5] , an inflammatory lesion, or spinal ischemia should be in the differential diagnosis [6].

Spinal dural arteriovenous fistulas (SDAVFs) are considered to be acquired and should be distinguished from congenital intradural perimedullary arteriovenous fistulas (PMAVFs).

Lumbar puncture and steroid administration for the cases of SDAVF could aggravate the patient's neurological symptoms. Therefore, lumbar puncture and initiation of immunotherapy should be avoided until SDAVF is completely excluded in patients with suspected myelitis on spine MRI without gadolinium-enhancement, even if their neurological symptoms progress rapidly [7].

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