Lumbar dural arteriovenous fistula

A 29-year-old man presented with progressive paraparesis associated with sensory impairment in both lower limbs for the past 2 years. He was experiencing the sensation of incomplete urinary evacuation. The patient had undergone an earlier operation for a lumbar lipomeningocele at birth. Magnetic resonance images of the lumbosacral spine showed a low-lying conus medullaris adherent to a caudal lipoma. There was a leash of abnormal vascular channels in the adjacent subarachnoid space. The patient underwent spinal angiography that revealed a dural arteriovenous fistula (AVF) principally fed by the left fourth lumbar (L-4) radicular branch. At surgery the cord was detethered by disconnection of the sacral lipoma. The dural fistula was obliterated by occlusion of the L-4 radicular feeder close to the nidus of the fistula. Postoperatively, the patient experienced an immediate relief of sensation of tightness in both lower limbs. There was a gradual improvement of power and sensation at the 6-month follow-up examination. According to the authors' literature search, the present case is a unique report of a rare association of spinal cord tethering due to a caudal lipoma associated with a lumbar dural AVF. The present report discusses the etiopathology, presentation, and management of this case [1)].

Spinal dural arteriovenous fistula (SDAVF) is rare but still the most commonly encountered vascular malformation of the spinal cord. A 31-year-old male developed gait disturbance due to weakness of his lower extremities, voiding difficulty and sexual dysfunction with a progressive course since 3 months. He showed areflexia in both knees and ankles. Electromyographic findings were suggestive of multiple root lesions involving bilateral L2 to S4 roots of moderate degree. Magnetic resonance images showed high signal intensity with an ill-defined margin in T2-weighted images and intensely enhanced by a contrast agent through the lumbosacral spinal cord. Selective spinal angiography confirmed a dural arteriovenous fistula with a nidus at the L2 vertebral level. After selective endovascular embolization, his symptoms drastically improved except sexual dysfunction. We report a rare case of cauda equina syndrome due to spinal arteriovenous fistula with drastic improvement after endovascular embolization [2)].

1)
Mavani SB, Nadkarni TD. Tethered cord due to caudal lipomeningocele associated with a lumbar dural arteriovenous fistula. J Neurosurg Spine. 2014 Sep;21(3):489-93. doi: 10.3171/2014.5.SPINE13670. Epub 2014 Jun 27. PubMed PMID: 24971477.
2)
Shin MJ, Kim W, Baik SK, Kim SY, Kim SN. Cauda equina syndrome caused by spinal dural arteriovenous fistula. Ann Rehabil Med. 2011 Dec;35(6):928-33. doi: 10.5535/arm.2011.35.6.928. Epub 2011 Dec 30. PubMed PMID: 22506223; PubMed Central PMCID: PMC3309391.

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