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DAVF Images

Case 15: Spinal Dural AV Fistula

Spinal dural arteriovenous fistula (SDAVF) is a rare disease, the etiology of which is not entirely clear. It is the most common vascular malformation of the spinal cord, comprising 60–80 % of the cases.

The time between the onset of symptoms and diagnosis is typically late in the disease course because of vague symptoms and signs in initial stages often mistaking it for other entities like demyelinating or degenerative diseases of the spine. It induces abnormal flow of the blood from the arterial system to the venous system, venous hypertension, venous occlusion, intramedullary edema, and progressive myelopathy. If left untreated it is associated with severe morbidity and may lead to progressive myelopathy. Hence early diagnosis and treatment is very important in this completely treatable condition.

Spinal angiography is still considered the gold standard for diagnosis; however, MRI/MRA is increasingly used as a screening tool.

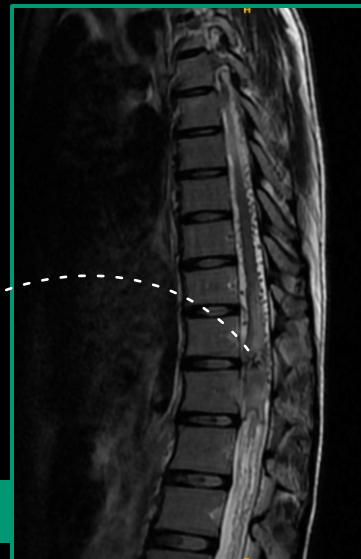
Modern endovascular techniques like embolisation are becoming increasingly more effective in treating SDAVF offering a less invasive treatment option as compared to microsurgical treatment options.

Heightened awareness by radiologists and clinicians to this rare entity is essential to make a timely diagnosis of this treatable disease

20 YEAR OLD GIRL

- Presented with subacute onset weakness in both lower limbs right more than left over 3-4 days with incontinence of urine prior to presentation
- On examination she had paraparesis, right lower limb grade 1 & left lower limb grade 2 power with brisk deep tendon reflexes and extensor plantar
- She had decreased sensation up to D10 level

MRI T2 Sag - Cord oedema with intra-axial haemorrhage



Multiple flow voids suggesting spinal DAVF



Spinal DSA - spinal DAVF with Single feeder from radicular artery



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Cath Images



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Patient's clinical status

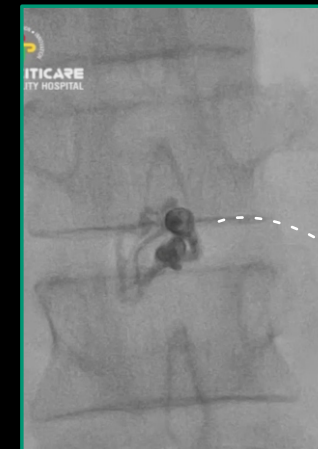
- Her MRI of whole spine showed - hyperintensities involving spinal cord from T11 to L2 with multiple flow voids suggesting a possibility of spinal dural arterio-venous fistula (DAVF)
- She underwent DSA which confirmed the presence of DAVF with a single feeder at T11 level



Partial

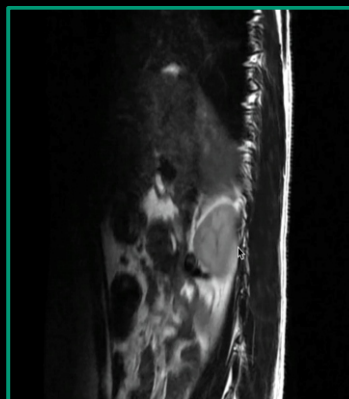


Complete



SQUID Cast

Spinal DAVF Embolisation



Post Embolisation one month follow up



- She underwent DAVF embolisation through right femoral route
- She was stabilised and started improving
- At 1 month follow up she improved completely except for mild dorsiflexion weakness in right LL

CAROTID-CAVERNOUS FISTULA (CCF)

Carotid-Cavernous Fistula Carotid cavernous fistula (CCF) is an abnormal communication between the cavernous sinus and the carotid arterial system. A CCF can be due to a direct connection between the cavernous segment of the internal carotid artery (ICA) and the cavernous sinus, or a communication between the cavernous sinus, and one or more meningeal branches of the internal carotid artery, external carotid artery or both. These fistulas may be divided into spontaneous or traumatic in relation to cause and direct or dural in relation to angiographic findings. The most common (70%-90%) etiology of direct CCF is trauma resulting in tear in the ICA within the cavernous sinus.

Patients usually presents with corkscrew episcleral blood vessels, conjunctival chemosis, pulsating proptosis, thrill, bruit and external ophthalmoplegia.

CT or MRI typically shows enlarged superior ophthalmic vein (SOV), thick extraocular muscles and evidence of enlarged cavernous sinus with a convexity of the lateral wall. Conventional angiogram (DSA) not only helps in confirming diagnosis but also in classification based upon communications.

Endovascular embolisation of the fistula is the treatment of choice with a combination of detachable balloons, coils, stents, or liquid embolic agents. The procedure can be performed from either an arterial or venous approach. Use of these materials and techniques can yield a high cure rate with minimal complications