Spinal dural arteriovenous fistula

Spinal arteriovenous fistula (SDAF) within the dura.

see also Dural arteriovenous fistula.

It is a connection between a radicular artery and a radicular vein, (there is no intervening nidus between a meningeal segmental artery and a radiculomedullary vein) resulting in venous hypertension and obstruction of the venous flow. Consequently, edema forms beneath the fistula and congestive ischaemia of the myelum develops.

Epidemiology

They are the most common type of spinal arteriovenous malformation, especially in middle-aged men.

The annual incidence are 5-10 cases per million. The data on efficacy, recurrence rates and complications of endovascular treatment versus surgical treatment is limited.

Pathophysiology

The pathophysiology results in perimedullary venous congestion and in turn spinal cord congestion.

The craniocaudal extent of enlarged intrathecal veins draining SDAVF correlates with patient functional status, providing further insight into the pathophysiology of venous hypertensive myelopathy.

Diagnosis

While digital subtraction spinal angiography remains the gold standard, recent advances in noninvasive vascular imaging have improved the diagnosis of SDAVF.

It is a time consuming and potentially dangerous investigation as dissection of a vessel can potentially lead to cord ischaemia.

The site of maximal MRI abnormality is not a reliable indicator of the location of the fistula, which can be many levels away. As such a complete spinal angiogram consists of selective catheterisation of the bilateral:

- intercostal arteries
- lumbar arteries
- median and lateral sacral arteries
- vertebral arteries
- ascending cervical arteries
- intracranial vessels may also need to assessed if no fistula is found including
- ascending pharyngeal artery
meningohypophyseal trunk
middle meningeal artery
occipital artery.

Scales

Aminoff and Logue disability scale

Differential diagnosis

Spinal dural arteriovenous fistula differential diagnosis.

Treatment

Spinal dural arteriovenous fistula treatment.

Outcome

see Spinal dural arteriovenous fistula outcome.

Case series

Spinal dural arteriovenous fistula case series.

Case reports

Spinal dural arteriovenous fistula case reports.

References