

# Intracranial dural arteriovenous fistula clinical features

Clinical features of [DAVF](#) vary depending on their [location](#), arterial supply, degree of arteriovenous [shunting](#), and most importantly, their venous drainage pattern <sup>1) 2) 3) 4)</sup>

DAVF lacking [cortical vein](#) drainage (CVD) may be [asymptomatic](#), or present with [symptoms](#) related to increased [dural sinus](#) blood flow, such as [pulsatile tinnitus](#), the latter particularly common for [transverse sinus](#) and [sigmoid sinuses](#) lesions.

Generalized central nervous system symptoms that may be related to venous hypertension or [cerebrospinal fluid malabsorption](#), while resulting [cranial nerve palsy](#), are often because of an arterial steal phenomenon or occasionally mass effect from an enlarged arterial feeder.

In addition, [cavernous sinus dural arteriovenous fistula](#) may present with orbital symptoms, including [chemosis](#), [proptosis](#), [ophthalmoplegia](#), and decreased [visual acuity](#).

DAVF with CVD typically have more aggressive clinical presentations, including the sudden onset of severe [headache](#), [seizures](#), nonhemorrhagic neurological deficit (NHND), and [intracranial hemorrhage](#), including intraparenchymal, subarachnoid, and [subdural hematoma](#).

In a meta-analysis, Lasjaunias et al <sup>5)</sup> reviewed 195 cases of DAVF and found that focal neurological deficits were related to the presence of associated cortical venous drainage (CVD) and venous congestion in the affected vascular territory. Less common aggressive presentations include brain stem or cerebellar dysfunction secondary to venous congestion, parkinsonism-like symptoms, extra-axial hemorrhage in the cervical spine, as well as cervical and upper thoracic myelopathy.

DAVF with extensive arteriovenous shunting, particularly in the setting of dural sinus thrombosis, can result in impaired venous drainage from the brain and the global venous hypertension. This can lead to cerebral edema, encephalopathy, and cognitive decline <sup>6)</sup>.

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[Pulsatile tinnitus](#) is the most common presenting symptom of a [DAVF](#). Cortical venous drainage with resultant venous hypertension can produce [intracranial hypertension](#), and this is the most common cause of [morbidity](#) and [mortality](#) and thus the strongest indication for [Intracranial dural arteriovenous fistula treatment](#).

DAVFs may also cause global [cerebral edema](#) or [hydrocephalus](#) due to poor cerebral venous drainage or by impairing the function of the [arachnoid granulations](#), respectively. Other DAVF symptoms/signs include [headaches](#), [seizures](#), cranial nerve palsies, and orbital venous congestion.

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Leptomeningeal venous drainage can lead to venous hypertension and [intracranial hemorrhage](#).

The majority of patients presented with non-aggressive symptoms. 18% presented with intracranial hemorrhage: all the hemorrhages occurred in high-grade DAVFs <sup>7)</sup>.

see [Dural arteriovenous fistula presenting as an acute subdural hemorrhage](#).

Only 4 cases of DAVF causing [syncope](#) have been reported, all in combination with other neurological symptoms. In comparison, they report a unique case of DAVF presenting solely with recurrent syncope, a previously undocumented finding in the literature. The case adds to other reports of nonspecific DAVF presentations and highlights the importance of considering this [etiology](#) <sup>8)</sup>.

## References

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