

# Cavernous sinus dural arteriovenous fistula treatment

The emergent treatment is warranted, however, when the risk of permanent visual impairment is imminent, or when cortical venous hypertension predisposes to [intracranial hemorrhage](#). Treatment may be challenging due to the small size of the feeding arteries often arising from the cavernous internal carotid artery (ICA), the risk of inadvertent embolization of external to internal carotid artery collaterals, and the inconsistent and often discontinuous nature of the venous system.

[Endovascular treatment](#) options include [transvenous embolization](#) and transarterial embolization. Endovascular treatment is sometimes combined with a surgical approach to the engorged orbital veins.

## Endovascular treatment

[Cavernous sinus dural arteriovenous fistula Endovascular treatment](#)

## Case series

The data from 165 consecutive patients diagnosed as CS-dAVF from January 2005 to September 2018 were analyzed. The demographic data included approaching route, embolization times, embolization material, the sequence of embolization, number of embolization sessions, and angiographic and clinical outcomes. Interrater agreement of bilateral CS-dAVF diagnosis was performed using the Kappa coefficient. The factors associated with treatment outcome were analyzed using Pearson's  $\chi^2$  test.

Bilateral CS-dAVF was detected in 43 patients (26%). Angiographic presentations that showed evidence of sinus thrombosis, dangerous venous drainage, and higher Satomi classification were more commonly found in bilateral CS-dAVF than in unilateral CS-dAVF. Good clinical outcome and cure from angiography were obtained in 90% and 74%, respectively. Ipsilateral inferior petrosal sinus-intercavernous sinus-contralateral CS catheterization was the major approach route of treatment. The factors associated with improved clinical outcome were transvenous approach, shunt closure, coil embolization, and sequencing the embolization ( $P < 0.001$ ).

Dangerous venous drainage tends to increase in bilateral CS-dAVF. Retrograde ipsilateral [inferior petrosal sinus catheterization](#) using coil embolization and sequencing the embolization are the major concerns for treatment <sup>1)</sup>

<sup>1)</sup>

Churojana A, Sakarunchai I, Aurboonyawat T, Chankaew E, Withayasuk P, Sangpetngam B. Efficiency of endovascular therapy for bilateral cavernous sinus dural arteriovenous fistula. *World Neurosurg*. 2020 Oct 10:S1878-8750(20)32193-8. doi: 10.1016/j.wneu.2020.10.001. Epub ahead of print. PMID: 33049381.

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