

Intracranial dural arteriovenous fistula surgery

While [endovascular approaches](#) have emerged as the primary [treatment](#) for most [DAVFs](#), certain [fistula](#) types are still best dealt with via open surgery as the first line strategy ¹⁾.

Furthermore, surgery has been used to successfully treat DAVFs after previous partial, incomplete, or failed [endovascular treatment](#). Finally, surgery can be used adjunctively in a combined approach to provide direct access for [embolization](#) of DAVFs that are inaccessible by a purely endovascular route.

Preoperative embolization may facilitate surgical treatment ²⁾ by lessening the risk of catastrophic hemorrhage, which may occur simply during the performance of the craniotomy ³⁾.

The use of the craniotome is discouraged, as a sinus or venous laceration could produce a fatal hemorrhage. Contingencies for the rapid administration of blood products must be made (large bore central lines). The scalp incision, craniotomy flap, and dural incision should be planned in a strategic manner to control and sequentially eliminate the blood supply to the lesion at each step, while maximizing the exposure as needed.

Surgical options for the treatment of DAVFs include the following techniques ⁴⁾:

1. radical fistula excision
2. sinus skeletonization
3. disconnection of cortical venous drainage
4. ligation of the fistulous point and/or outflow vein
5. sinus packing
6. coagulation of arterial feeders to the lesion

While surgery vs. endovascular treatment can be considered for all DAVF locations, two locations generally remain more favorable for surgery:

1. anterior fossa/ethmoidal
2. tentorial DAVFs

The endovascular approach to these fistulas is difficult, whereas the surgical approach is often straightforward. Surgically-assisted embolization, whereby a [craniotomy](#) is performed followed by direct puncture for embolization of the target vessel, may be utilized in select cases.

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²⁾

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