THE ROLE OF NON-INVASIVE TREATMENT IN DURAL ARTERIOVENOUS FISTULAS

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Background: Dural arteriovenous fistulas (DAVF) of the cavernous sinus are acquired arteriovenous shunts between dural branches of the internal and/or external carotid arteries and the cavernous sinus.

Case Report: An 82 year-old woman was admitted for left eye pain, eyelid edema and conjunctival hemorrhage which developed during the previous 15 days. She presented left periorbital ecchymosis, nonpulsatile exophthalmos, chemosis, conjunctival injection and left external ophthalmoplegia. Ophthalmological evaluation revealed elevated left intraocular pressure (32 mmHg) and normal visual acuity. Cerebral angiography confirmed a DAVF of the left cavernous sinus (Borden classification type I; Barrow classification type D) with no evidence of cortical venous drainage. Non-invasive treatment with left carotid and left eye compression and acetazolamide was decided. Transient clinical improvement of local signs after compression periods, slight improvement of eye movements and reduction of intraocular pressure (24mmHg) occurred. On day 5 of treatment, she developed a mild and transient right motor deficit and compression maneuvers were stopped. Neuroimaging revealed no new lesions. Elevation of intraocular pressure persisted and endovascular treatment was proposed.

Discussion: Manual external carotid-jugular compression is an accepted treatment for DAVF of the cavernous sinus except in cases with cortical venous drainage and progressive visual decline. A 30% cure rate with this technique has been reported, with a mean time to closure of 41-123 days. Predictors of compression treatment success include short symptom onset-treatment interval and venous drainage without involvement of the inferior petrosal sinus. We discuss benefits and risks of non-invasive treatment and timing for endovascular approach.