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TEMPOROMANDIBULAR PAIN AND VISUAL DISTURBANCE AT THE EMERGENCY DEPARTMENT: NOT ALWAYS A HORTON ARTERITIS

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Introduction

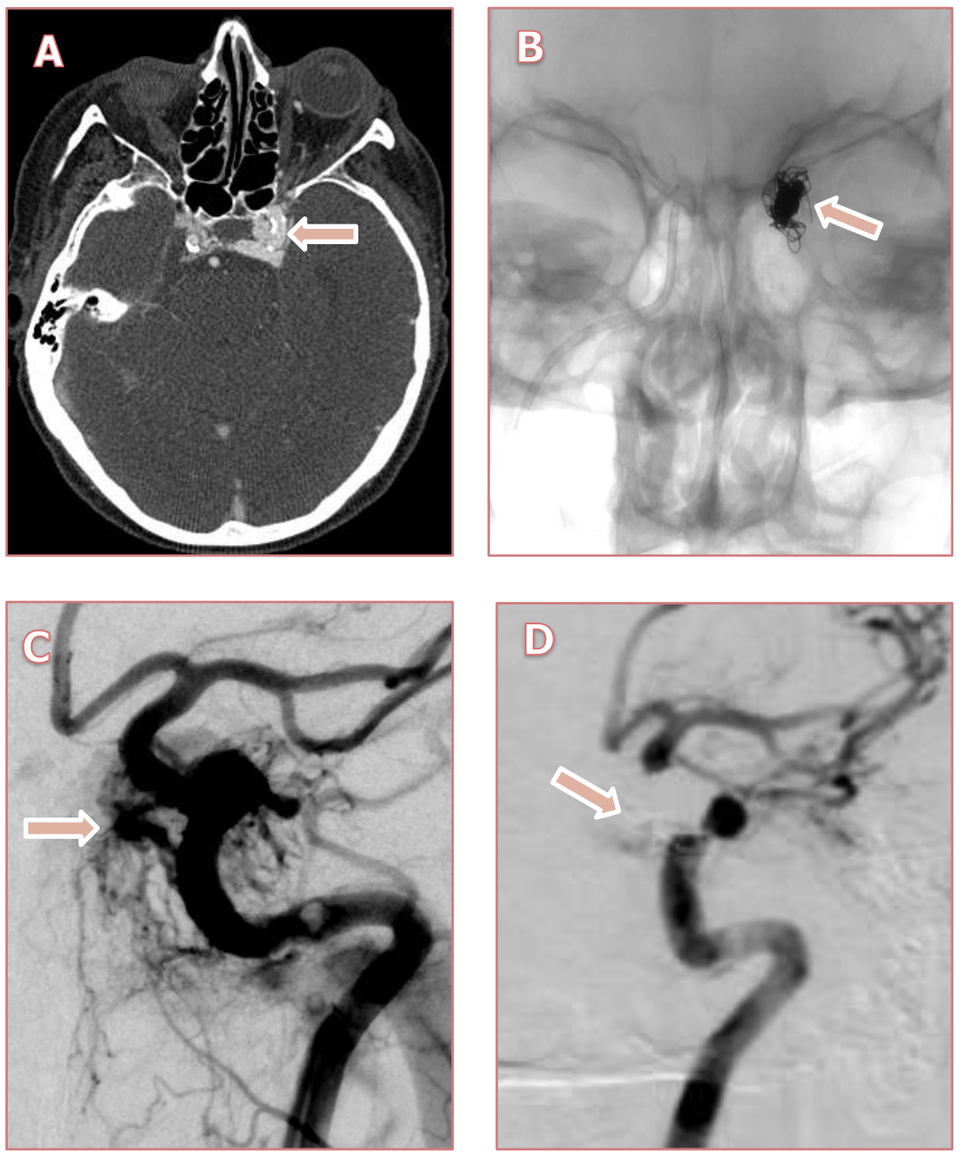
Carotid cavernous fistulas (CCF) are rare entities, arising from abnormal connections between the carotid arterial circulation and the cavernous sinus. Direct, high-flow, CCF are the most frequent type of CCF and most develop secondary to head trauma in young adult men. However, CCF uncommonly occur spontaneously. Spontaneous CCF are typically found in older, female patients and are most often indirect, low-flow, CCF. [1]

Case report

A 78-year-old Caucasian woman presented to the emergency department (ED) with a 15-day left progressive temporo-mandibular pain and distorted vision. Physical examination showed subtle left exophthalmos, exotropia, hypotropia and binocular oblique diplopia. The patient also had orbital bruit on auscultation. Further neurological examination and biological evaluation were unremarkable. A CT angiography of the brain and subsequent cerebral angiography revealed a left CCF, which was managed successfully by coil embolization. Later follow-up demonstrated complete resolution of the patient's symptoms.

Discussion

The diagnosis of CCF can be difficult. Diagnosis is based on clinical presentation as well as neuroimaging. CCF are rare. Consistent with their aetiology, direct CCF present acutely, progress rapidly, and the majority of patients present a classic triad of chemosis, pulsating proptosis and ocular bruit. Other signs and symptoms are i.a. diplopia, headache, CN palsy and vision loss. Whether post-traumatic or spontaneous in nature, signs and symptoms related to indirect CCF are often insidious and varied, but as well as potentially severe. The pattern of signs and symptoms, depends on the rate of flow in the CCF, the location of venous drainage of the CCF, the increased pressure in the cavernous sinus and the compression of its contents. Chemosis and arterialization of conjunctival veins are often the first and most prominent manifestations of indirect CCF. [1-2]



A. Angio-CT showing cortical reflux, with filling of the cavernous sinus (arrow) and left exophthalmos grade II;
B. Left cavernous sinus after coil (arrow) placement;
C. Cerebral angiography showing left indirect CCF (arrow);
D. Post-treatment cerebral angiography showing occlusion (arrow) of the left CCF.

Why an emergency physician should know this...

While the clinical diagnosis of post-traumatic direct CCF at the ED may be straightforward in patients who present with classic signs and symptoms after cranial trauma. Spontaneous and indirect CCF may be easily misdiagnosed ad the ED. The insidious onset, atypical and varied presentation of signs and symptoms may result in a diagnostic challenge. Given a delay in diagnosis and treatment of CCF may result in permanent vision loss, it is essential that emergency physicians, in the right setting, include CCF in their differential diagnosis, e.g. in case of unilateral temporomandibular pain and diplopia.

References

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[**2**] Kirsch M1 et al. Endovascular management of dural carotid-cavernous sinus fistulas in 141 patients. Neuroradiology 2006; 48(7).