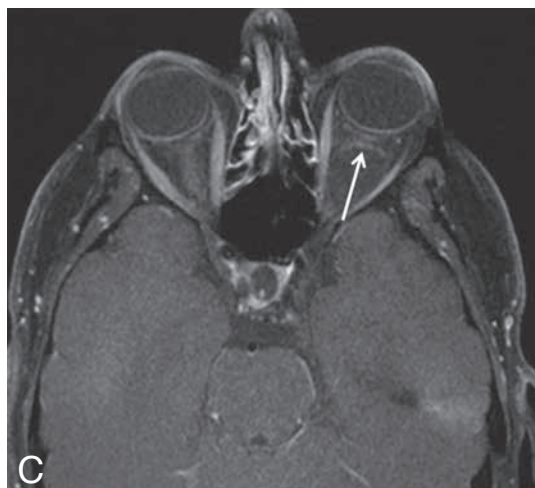
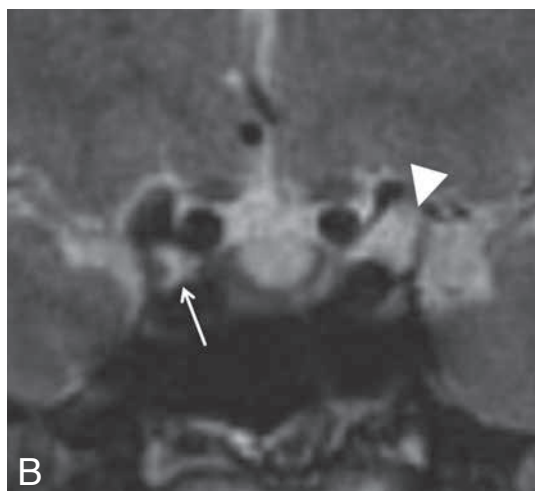
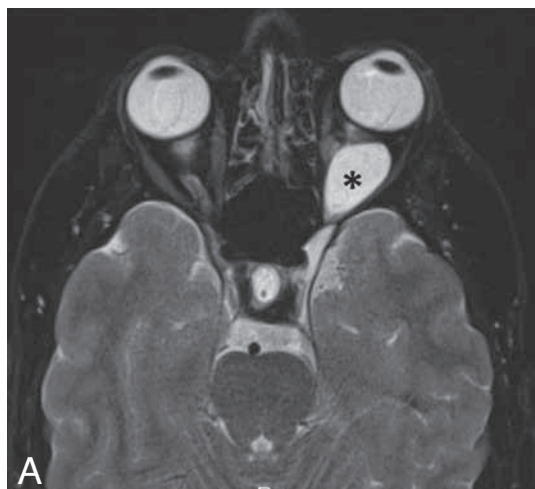


IMAGES IN CLINICAL RADIOLOGY



Arachnoidal cyst arising from the oculomotor cistern

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A 36-year-old man with proptosis of the left eye complained of frontal headache. His medical history was relevant for amblyopia and loss of visual acuity on the left side. Ophthalmological examination revealed an oculomotor nerve paralysis of the left eye. Subsequent Magnetic Resonance Imaging (MRI) showed a well delineated T2 hyper- (asterisk in Fig. A) and T1 hypointense (not shown) cystic intraorbital mass. The lesion further extended intracranially through the superior orbital fissure in close proximity with the left oculomotor cistern (Fig. B, oculomotor cistern right (arrow) and cystic lesion (arrowhead) at the level of the oculomotor cistern left). The left optic nerve was displaced superomedially and was clearly delineated along its further course. After intravenous gadolinium administration, faint peripheral enhancement was noted (arrow in Fig. C). The MRI findings are compatible with an arachnoidal cyst arising from the oculomotor nerve cistern.

Surgical fenestration of the lesion was performed by a left-sided pterional approach. Histopathological analysis of the cyst wall showed collagenous tissue lined with arachnoidal cells, in keeping with an arachnoidal cyst arising from the oculomotor nerve cistern.

Comment

The oculomotor nerve cistern (OMC) is an arachnoid-lined dural cuff containing the oculomotor nerve as it enters the cavernous sinus roof. This variably sized cistern is filled with cerebrospinal fluid (CSF) and is continuous with the basal cistern. The opening of the OMC on the roof of the cavernous sinus is called the porus. From there on, the OMC is then gradually tapered along its course in the cavernous sinus and terminates below the tip of the anterior clinoid process. The oculomotor nerve more distally passes through the superior orbital fissure to enter the orbital apex.

An arachnoid cyst is a fluid filled cavity within the arachnoid membrane. On MRI, the content resembles CSF on all sequences. Subtle peripheral enhancement may be seen. Oblique sagittal orientated T2-WI may be helpful to visualize the course of the oculomotor nerve. Various other lesions can arise in the OMC such as schwannoma, cavernous hemangioma, lymphoma, lymphangioma, metastases, dermoid and epidermoid cysts. The presence of an arachnoid cyst arising from the OMC is rare. Because of the intimate relationship with the oculomotor nerve, OMC lesions usually cause oculomotor nerve palsy. Therapy includes fenestration of the cyst with accompanying decompression and relief of the mass effect on the oculomotor nerve.

Reference

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