Oculomotor cistern

The oculomotor nerve (the third cranial nerve [CNIII]) is accompanied by a CSF-filled arachnoid-lined dural cuff as it enters the superolateral cavernous sinus roof. This oculomotor cistern (OMC) is well known to neurosurgeons as an avascular space used to expose and mobilize the nerve during cavernous sinus surgery.

The OMC is an important landmark for all surgeries involving the roof and lateral walls of the cavernous sinus, the basilar cisterns, the suprasellar area, and the middle cranial base.

It is important for radiologists and neurosurgeons planning tumor resection in this area to understand OMC MR imaging anatomy and pathology ¹⁾.

It can be routinely identified on dedicated thin-section high-resolution MR images. It can also be identified on nearly two thirds of standard whole-brain MR images ²⁾.



auditory canal lesions shows the right CNIII entering the porus and the left CNIII within the CSF-filled OMC (arrows). B, Coronal T2-weighted image from a routine high-resolution 3T screening study to evaluate IAC lesions shows CNIIIs in the CSF-filled OMCs (arrows).

Seven patients (4.1%) with oculomotor cistern extension and tracking were identified in a cohort of 170 patients with pituitary macroadenoma. The most common presenting symptoms were visual deficit (6 patients; 86%), apoplexy (3 patients; 43%), and oculomotor nerve palsy (3 patients; 43%). Lone oculomotor nerve palsy was seen in 2 patients without apoplexy and 1 patient with an apoplectic event. Gross-total resection was achieved via a microscopic endonasal transsphenoidal approach with or without endoscopic aid to the sella in 14%, near-total resection in 29%, and subtotal resection in 57% of patients in the data set.

pituitary neuroendocrine tumor extension along the oculomotor cistern is uncommon; however, preoperatively recognizing such extension should play an important role in the surgeon's operative considerations and postoperative clinical management because this extension can limit gross-total resection using the transsphenoidal approach alone ³⁾.

1)

Martins C, Yasuda A, Campero A, Rhoton AL Jr. Microsurgical anatomy of the oculomotor cistern. Neurosurgery. 2006 Apr;58(4 Suppl 2):ONS-220-7; discussion ONS-227-8. PubMed PMID: 16582644.

Everton KL, Rassner UA, Osborn AG, Harnsberger HR. The oculomotor cistern: anatomy and highresolution imaging. AJNR Am J Neuroradiol. 2008 Aug;29(7):1344-8. doi: 10.3174/ajnr.A1089. Epub 2008 Apr 16. PubMed PMID: 18417604.

3)

Hoang N, Tran DK, Herde R, Couldwell GC, Osborn AG, Couldwell WT. Pituitary macroadenomas with oculomotor cistern extension and tracking: implications for surgical management. J Neurosurg. 2016 Aug;125(2):315-22. doi: 10.3171/2015.5.JNS15107. Epub 2015 Nov 13. PubMed PMID: 26566201.

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