Pterional approach indications

Aneurysms

The pterional approach to aneurysms of the circle of Willis is one of the most common approaches in vascular neurosurgery [1) 2) 3)].

The aim of the pterional approach is to use a naturally occurring plane, through the sylvian fissure (SF), to approach an aneurysm without extensive brain retraction [4)].

see Pterional approach for anterior communicating artery aneurysm

Tumoral lesions

Places optic nerve and sometimes carotid artery in line of vision of tumor. There is also incomplete access to intrasellar contents. Good access for tumors with significant lateral extrasellar extension.

Involving the sellar/parasellar region, anterior and anterolateral circle of Willis, middle cerebral artery, anterior brainstem, upper basilar artery, insula, basal ganglia, mesial temporal region, anterior cranial fossa, orbit, and optic nerve are within the reach of the frontotemporal approach [5)].

Olfactory groove meningioma [6)].

Cavernous sinus meningioma

Meckel Cave

Traditionally, a pterional approach is utilized to access the Meckel cave. Depending on the tumor location, extradural dissection of the Gasserian ganglion can be performed. An endoscopic endonasal access could potentially avoid a craniotomy in these cases [7)].

Cavernous sinus hemangiomas (CSH)

The microsurgery through modified pterional approach combined with fronto-temporal preauricular subtemporal approach is an effective procedure for CSH [8)].

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