Pretemporal approach

Although pterional craniotomy and its variants are the most used approaches in neurosurgery, few studies have evaluated their precise indications.

da Silva et al., evaluated the pterional (PT), pretemporal (PreT), and orbitozygomatic (OZ) approaches through quantitative measurements of area, linear, and angular exposures of the major intracranial vascular structures.

Eight fresh, adult cadavers were operated with the PT, followed by the PreT, and ending with the OZ approach. The working area, angular exposure of vascular structures and linear exposure of the basilar artery were measured.

The OZ approach presented a wider area (1301.3 ± 215.9 mm2) with an increase of 456.7 mm2 compared with the PT and of 167.4 mm2 to the PreT (P = 0.011). The extension from PT to PreT and OZ increases linear exposure of the basilar artery. When comparing the PreT and OZ, they founded an increase in the horizontal and vertical angle to the bifurcation of the ipsilateral middle cerebral artery (P = 0.005 and P = 0.032, respectively), horizontal angle to the basilar artery tip (P = 0.02), and horizontal angle to the contralateral ICA bifurcation (P = 0.048).

The OZ approach offered notable surgical advantages compared with the traditional PT and PreT regarding to the area of exposure and linear exposure to basilar artery. Regarding angle of attack, the orbital rim and zygomatic arch removal provided quantitatively wider exposure and increased surgical freedom. A detailed anatomic study for each patient and surgeon experience must be considered for individualized surgical approach indication [1]. see [2]

1)
da Silva SA, Yamaki VN, Solla DJF, Andrade AF, Teixeira MJ, Spetzler RF, Preul MC, Figueiredo EG. Pterional, Pretemporal, and Orbitozygomatic Approaches: Anatomic and Comparative Study. World Neurosurg. 2019 Jan;121:e398-e403. doi: 10.1016/j.wneu.2018.09.120. Epub 2018 Sep 26. PubMed PMID: 30266695.
2)
Chaddad-Neto F, Dória-Netto HL, Campos JM Filho, Reghin M Neto, Oliveira E. Pretemporal craniotomy. Arq Neuropsiquiatr. 2014 Feb;72(2):145-151. PubMed PMID: 24604369.