Middle temporal gyrus approach

In 1958, Niemeyer described a more selective approach to the hippocampus and amygdala through the middle temporal gyrus [1].

This transtemporal approach transcortical approach through the Middle temporal gyrus MTG not including transsulcal approach had been reported for the removal of the trigonal tumors and explained the procedure as the incision of MTG [2] [3].

Advantages

Short trajectory, early identification of the anterior choroidal artery.

Indications

Can be the first choice for vascular trigone ventricular meningioma of the non-dominant hemisphere, fed mainly by the anterior choroidal artery.

Middle temporal gyrus approach when the temporal horn of the lateral ventricle is dilated.

The MTG approach is the most widely used procedure for trigone tumors because of its short trajectory, early identification of the anterior choroidal artery.

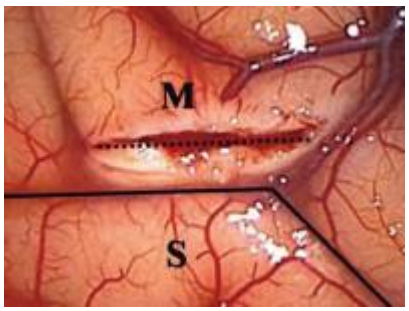
Complications

However, the MTG incision may result in serious neurological deficits such as visual field defects, language disorder in the dominant hemisphere, or memory disturbance.

Possible mechanism of the postoperative visual field defect is due to the retraction injury of the optic radiation by the standard MTG approach.

Modification

The modified trans-MTG approach provides a safe and useful technique for trigonal tumors without postoperative visual field deterioration and affords adequate exposure of the trigonal tumor with a short trajectory [4].



S: Superior temporal gyrus

The cortical projection of the inferior choroidal point is a reliable landmark to place the corticectomy and reach the temporal horn through a middle temporal gyrus approach [5].

1)
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2)
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3)
Handa H, Nagasawa S. [Surgery of trigonal tumor] No Shinkei Geka. 1984;12:901–912.
4)
Choi JW, Jung S, Jung TY, Jang WY, Moon KS, Kim IY. Modified trans-middle temporal gyrus approach for trigonal tumor to preserve visual field. J Korean Neurosurg Soc. 2011 Dec;50(6):538-41. doi: 10.3340/jkns.2011.50.6.538. Epub 2011 Dec 31. PubMed PMID: 22323945; PubMed Central PMCID: PMC3272519.
5)
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