Telovelar approach

The telovelar approach is an alternative to cerebellar splitting to gain access to the fourth ventricle through the so-called cerebellomedullary fissure (CMF).

In the telovelar approach, the cerebellomedullary fissure (CMF) is exposed and access to the ventricle is obtained by incising the tela chorioidea and inferior medullary velum. This approach enables the exploration of the entire ventricle cavity from the obex to the aqueduct.

see cerebellomedullary fissure approach

The telovelar approach, which lacks incision of any part of the cerebellum, provides an additional exposure to the lateral recesses and the foramen of Luschka. ¹

It is a safer procedure for interventions involving the pathological lesions of the fourth ventricle floor.²

The unilateral approach is sufficient in most cases of small lesions. However, large fourth ventricle tumors are more problematic since they distort the normal anatomy with both vermis and cerebellar peduncles thinned and stretched out. This puts the patient at increased risk for a neurological deficit, which is minimized with a bilateral telovelar approach. By illustrating the adequacy of this technique, Liu et al., emphasize the suitability of a rather unusual bilateral approach, which will provide excellent panoramic visualization of entire fourth ventricle and thus avoids complications usually associated with resections of large fourth ventricle tumors.³

Key Points

Early exposure of the interface lesion-floor of the fourth ventricle favours a safer tumour dissection.

Resection of tonsils is not necessary in the surgical setting

The posterior arch of C1 should be removed only if the tonsils are below the level of the foramen magnum.

The improved access to the lateral recess of the ventricle makes the telo-velar approach particularly effective in lesions attached to cerebellar peduncles.

The wide dissection of the cerebellomedullary fissure and gentle tonsils retraction may prevent from the occurrence of cerebellar mutism or other major cerebellar dysfunctions.

Even the bilateral opening of the CMF does not result in cerebellar mutism if wide and cautious dissection, avoiding retraction and vascular injuries, is obtained.

The exposure of the fourth ventricle was satisfactory also in patients harbouring lesions attached to the lateral or even the superolateral recesses of the ventricle.

A deep rostral tumour attachment seems to be, the main specific limitation of the telo-velar approach.

The risk of hydrocephalus can be reduced by opening of the fissure bilaterally, exposing the aqueduct, and by cisterna magna-fourth ventricle communication augmentation.

The EVD is taken in place for 48-72 h to prevent possible abrupt increase of the intracranial pressure and to favour wound closure.⁴

