

Surgical access to the [lateral recess](#) of the [fourth ventricle](#) (LR) is suboptimal with existing [transvermian approach](#) and [telovelar approaches](#) because of limited lateral exposure, significant retraction of the cerebellar tonsil, and steep trajectories near brainstem perforator arteries. The goal in this study was to assess surgical exposure of the tonsillobiventral fissure approach to the LR, and to describe the relevant anatomy.

Two formaldehyde-fixed cerebella were used to study the anatomical relationships of the LR. Also, the tonsillobiventral fissure approach was simulated in 8 specimens through a lateral [suboccipital craniotomy](#).

The pattern of the cerebellar folia and the cortical branches of the posterior inferior cerebellar artery were key landmarks to identifying the [tonsillobiventral fissure](#). Splitting the tonsillobiventral fissure allowed a direct and safe surgical trajectory to the LR and into the cerebellopontine cistern. The proposed approach reduces cervical flexion and optimizes the surgical angle of attack.

The tonsillobiventral fissure approach is a feasible and effective option for exposing the LR. This approach has more favorable trajectories and positions for the patient and the surgeon, and it should be added to the armamentarium for lesions in this location <sup>1)</sup>.

<sup>1)</sup>

Tayebi Meybodi A, Lawton MT, Tabani H, Benet A. Tonsillobiventral fissure approach to the lateral recess of the fourth ventricle. J Neurosurg. 2017 Oct;127(4):768-774. doi: 10.3171/2016.8.JNS16855. Epub 2016 Oct 28. PubMed PMID: 27791522.

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