

Endoscopic Posterior Transcortical Keyhole Approach

Accessing large lesions located in the [atrium](#) of the [lateral ventricle](#) without causing a neurologic deficit can be challenging.

The aim of a study of Wang et al. was to evaluate a modification of the posterior transcortical approach that may create sufficient exposure to the atrium of the lateral ventricle with less injury to the brain cortex and fibers using a technique that combines a microscope with an endoscope.

Craniotomy procedures performed using the posterior transcortical keyhole approach were simulated on 10 adult cadaveric heads (20 hemispheres). The anatomical structures in the lateral ventricle were observed through the microscope and endoscope. Three distance measurements on the [intraparietal sulcus](#) were recorded.

The anatomical structures related to the atrium of the lateral ventricle, including the [calcar avis](#), corpus callosum bulb, caudate nucleus, pulvinar, and glomus, were clearly observed under the microscope. Via the endoscope, a wider visualization of anatomical structures could be obtained. The distance from the intersection of the intraparietal sulcus and postcentral sulcus to the cerebral longitudinal fissure was 35.36 ± 1.06 mm, the depth of the intraparietal sulcus was 19.16 ± 1.03 mm, and the distance from the bottom of the intraparietal sulcus to the lateral ventricle was 21.31 ± 1.32 mm.

The microsurgical posterior transcortical keyhole approach could provide an ideal exposure to the atrium and the posterior part of the body of the lateral ventricle. The endoscopic posterior transcortical keyhole approach demonstrated a wider viewing range compared with the microscope. An endoscopic-controlled or -assisted surgery may reduce damage to normal brain tissue, facilitate total resection of the lesion, and improve the surgical outcome ¹⁾.

¹⁾

Wang X, Yang L, Zhang H, Yan Z, She L. Microsurgical and Endoscopic Posterior Transcortical Keyhole Approach to the Atrium of the Lateral Ventricle: A Cadaveric Study. J Neurol Surg A Cent Eur Neurosurg. 2015 Jan 16. [Epub ahead of print] PubMed PMID: 25594819.

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