

ApproachViewer

ApproachViewer is a component of [GTx-Eyes II](#), a software application for visual testing and evaluation. It is a [visual field](#) analysis tool that provides detailed, graphical representations of the [visual field](#), including the extent and pattern of [visual loss](#). ApproachViewer can be used by eye care professionals to diagnose and monitor a variety of [visual impairments](#), including [glaucoma](#), [macular degeneration](#), and other conditions that can affect visual function. The software provides a quick and easy way to analyze visual field test results and provides detailed information that can help in the development of individualized treatment plans for patients.

Different microsurgical [transcranial approaches](#) (MTAs) have been described to expose the posterior surface of the [petrous bone](#) (PPB). A quantitative, anatomical comparison of the most used MTAs, for specific areas of the PPB, is not available. Anatomical dissections were performed on five [formalin-fixed](#), latex-injected [cadaver heads](#) (10 sides). Six MTAs were analyzed: [Kawase approach](#) (KWA), [retrosigmoid approach](#) (RSA), retrosigmoid approach with suprameatal extension (RSAS), [retrolabyrinthine approach](#) (RLA), [translabyrinthine approach](#) (TLA), and [transcochlear approach](#) (TCA). Surgical volumes and exposed areas of each approach were quantified with a dedicated [neuronavigation](#) system ([ApproachViewer](#), part of [GTx-Eyes II](#), University Health Network, Toronto, Canada) and adjuvant software ([ITK-SNAP](#) and [Autodesk Meshmixer 3.5](#)). Areas and volumes were compared using linear mixed models. TCA provided the best exposure of [Trautmann's triangle](#) and the retromental, suprameatal, meatal, and premeatal regions. RSAs provided the best exposure to the inframeatal region, with RSAS gaining significant exposure to the suprameatal region. KWA had the highest surgical volume, and RLA the lowest. Transpetrosal approaches offer the widest exposure of PPB proportionally to their invasiveness. Retrosigmoid approaches, which get to the studied region through a postero-lateral path, are paramount for the exposure of the inframeatal and suprameatal region and, given the adequate exposure of the remaining PPB, represent an effective approach for the cerebellopontine angle (CPA). These anatomical findings must be considered with approach-related morbidity and pathological features in order to choose the most appropriate approach in clinical practice ¹⁾.

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Serioli S, Agosti E, Buffoli B, Raffetti E, Alexander AY, Salgado-López L, Hirtler L, Rezzani R, Maroldi R, Draghi R, Borghesi I, Calbucci F, Peris-Celda M, Fontanella MM, Doglietto F. Microsurgical transcranial approaches to the posterior surface of petrosal portion of the temporal bone: quantitative analysis of surgical volumes and exposed areas. *Neurosurg Rev*. 2023 Feb 6;46(1):48. doi: 10.1007/s10143-023-01956-y. PMID: 36745228.

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