Microsurgical Resection of a Pineal Cyst via a Paramedian Supracerebellar Infratentorial Approach

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Key words
- Headache
- Hydrocephalus
- Microsurgery
- Neuroendoscopy
- Pineal cyst
- Semisitting position
- Supracerebellar infratentorial approach

Abbreviations and Acronyms
MRI: Magnetic resonance imaging
SCIT: Supracerebellar infratentorial

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Supplementary digital content available online.

Citation: World Neurosurg. (2024) 185:113.
https://doi.org/10.1016/j.wneu.2024.02.049
Journal homepage: www.journals.elsevier.com/world-neurosurgery

Available online: www.sciencedirect.com

Pineal cysts are typically detected in around 1.3% to 4.3% of patients during routine magnetic resonance imaging (MRI) scans.[1,2] The vast majority of pineal cysts are benign, asymptomatic, and typically do not necessitate surgical intervention. Large pineal cysts are known to cause hydrocephalus with its associated symptoms and thus can require in rare cases surgical resection. Even in the absence of hydrocephalus, selected patients with large pineal cysts causing headaches and visual disturbances can find relief after surgical resection.[3,4]

The supracerebellar infratentorial (SCIT) approach is widely used and represents an extraparenchymatous approach through a natural corridor to the pineal region.[5] Performing this approach in a semisitting position allows for an optimal retraction of the cerebellum by gravity. We employ a minimally invasive paramedian SCIT approach for the resection of pineal cysts. In our experience, the paramedian SCIT approach allows for a less steep operating angle and a smaller craniotomy compared with the midline SCIT approach.

We present a 24-year-old female complaining of headache. The initial MRI was conducted 2 years before surgery. Following the initial evaluation, the patient experienced progressive headaches without neurologic deficits. A subsequent MRI revealed enlargement of the pineal cyst, leading to the indication for surgical resection.

The surgery was performed mainly under the operating microscope with endoscopic visualization in suitable situations as our small approach restricts bimanual dissection with an endoscope. In our experience, this approach provides a versatile and minimally invasive access to the pineal region, making it optimally suitable for pineal cysts requiring surgical resection.

CRediT AUTHORSHIP CONTRIBUTION STATEMENT

Thomas Rhomberg: Conceptualization, Data curation, Formal analysis, Methodology, Software, Visualization, Writing — original draft, Writing — review & editing. **Henry W.S. Schroeder:** Conceptualization, Data curation, Resources, Supervision, Writing — review & editing.

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Conflict of interest statement: Henry W.S. Schroeder acts as advisor for Karl Storz SE & Co. KG, Tuttlingen, Germany. The other author has no personal, financial, or institutional interest in any of the materials or devices described in this article.

Received 6 February 2024; accepted 9 February 2024

Citation: World Neurosurg. (2024) 185:113.
https://doi.org/10.1016/j.wneu.2024.02.049
Journal homepage: www.journals.elsevier.com/world-neurosurgery
Available online: www.sciencedirect.com