

# Sylvian fissure arachnoid cyst treatment

Type I Galassi classification of [middle cranial fossa arachnoid cysts](#) are best treated by microsurgical [fenestration](#).

Type II and III are accessed via [endoscope](#). The appearance of the [chiasmatic cistern](#) and [interpeduncular cisterns](#) on magnetic resonance imaging (MRI) helps to decide between endoscopic and microsurgical fenestration. Endoscopic cystocisternotomy is advocated when there is ample space between the third cranial nerve and the tentorial notch and between the optic nerve and the carotid artery within large cisterns with thin membranes, while microsurgical techniques remain a suitable option in cases of fenestration of deep thicker membranes in the vicinity of vital structures <sup>1)</sup>.

Various factors have to be considered before performing endoscopic fenestrations into the basal cisterns. The medial wall of the cyst is coursed by the arterial vessels of the Sylvian fissure that can be damaged when stoma is enlarged with sharp instruments. Moreover, the membranes of these cysts are difficult to penetrate due to their rich collagen content, so a sharp instrument or scissors are often used [18].

The literature related to middle fossa cyst treatment is not as diverse or as reliable as it is for other types of cysts.

A meta-analysis concluded that while all three surgical methods (endoscopic, microsurgical, and shunting) are effective for the management of middle fossa cysts, endoscopic fenestration is the preferred primary surgical modality. The latter two options should only be considered when symptoms are unchanged after endoscopic treatment [19].

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[Sylvian fissure](#) arachnoid cysts pose considerable management dilemmas. Surgical options include cyst [fenestration](#), either endoscopically or microsurgically, and [cystoperitoneal shunt](#).

The option of the mere clinical observation was chosen by the majority of surgeons in case of asymptomatic clinical discovery. On the other hand, a constantly high percentage of participants suggested direct surgical treatment based on clinical manifestations or as a preventive measure justified by the risk of spontaneous or traumatic intracranial bleeding. The only diagnostic investigation result which significantly influenced the surgical indication was a localizing electroencephalography, if the child presented with seizures. The result is that in most cases the surgical indication was based on a specific clinical manifestations and laboratory data. Craniotomy and arachnoid cyst marsupialization represented the preferred surgical option (66.6%), 28.8% of the participants suggesting pure or assisted endoscopic cyst marsupialization as primary surgical procedure. Cyst shunting was suggested by only three centers <sup>2)</sup>.

For those cysts, which can rupture and be accompanied by a [subdural hygroma](#) or [subdural hematoma](#), several treatment modalities have been reported.

A study demonstrated efficacy in a predominantly endoscopically treated patient cohort with Sylvian fissure arachnoid cysts, as indicated by improvement of clinical symptoms and diminished radiological SAC volume after treatment <sup>3)</sup>.

<sup>1)</sup>

Azab WA, Almanabri M, Yosef W. Endoscopic treatment of middle fossa arachnoid cysts. Acta Neurochir (Wien). 2017 Dec;159(12):2313-2317. doi: 10.1007/s00701-017-3320-z. Epub 2017 Sep 13. PubMed PMID: 28905234.

2)

Tamburrini G, Dal Fabbro M, Di Rocco C. Sylvian fissure arachnoid cysts: a survey on their diagnostic workout and practical management. Childs Nerv Syst. 2008 May;24(5):593-604. doi: 10.1007/s00381-008-0585-9. Erratum in: Childs Nerv Syst. 2008 May;24(5):635. Del Fabbro, Mateus [corrected to Dal Fabbro, Mateus]. PubMed PMID: 18305944.

3)

Schulz M, Kimura T, Akiyama O, Shimoji K, Spors B, Miyajima M, Thomale UW. Endoscopic and Microsurgical Treatment of Sylvian Fissure Arachnoid Cysts-Clinical and Radiological Outcome. World Neurosurg. 2015 Mar 25. pii: S1878-8750(15)00293-4. doi: 10.1016/j.wneu.2015.03.026. [Epub ahead of print] PubMed PMID: 25818148.

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