

Sylvian fissure arachnoid cyst

A [Sylvian fissure arachnoid cyst](#) (SAC) is a well-recognized location for an [intracranial arachnoid cyst](#) in the pediatric population.

Arachnoid cysts situated in the [middle cranial fossa](#) constitute the largest group of this type of lesion.

Classification

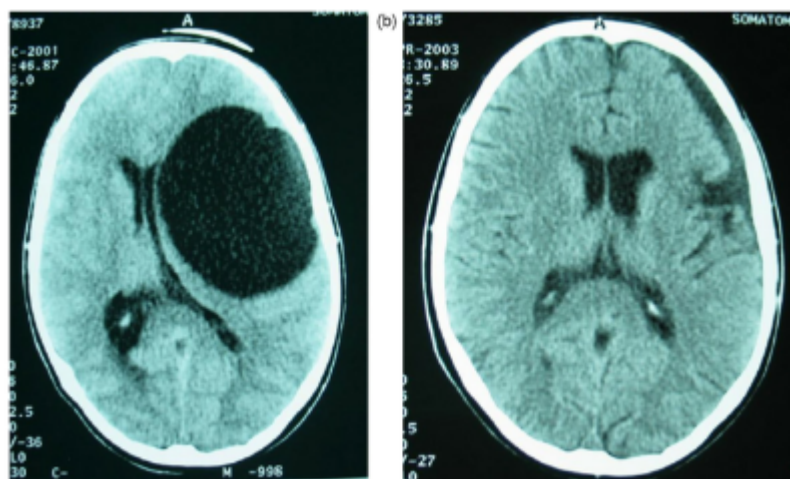
see [Sylvian fissure arachnoid cyst classification](#).

Clinical features

Intracranial sylvian arachnoid cysts are often asymptomatic lesions.

Results indicate that arachnoid cysts in the left temporal fossa may impair [cognitive function](#), that neuropsychological tests are necessary to disclose these impairments, and that cognitive improvement occurs after surgery ¹⁾.

Diagnosis



(a) Axial CT scan showing a left sylvian fissure arachnoid cyst. (b) Complete resolution after excision and marsupialization.

Treatment

see [Sylvian fissure arachnoid cyst treatment](#).

Complications

it sometimes leads to subdural or intracystic hemorrhage without major trauma. The reason of easy bleeding of the AC is not fully understood.

One of the rare complications after rapid decompression of the arachnoid cysts is haemorrhage in the surrounding brain as well as in remote areas.

Long-standing asymptomatic sylvian arachnoid cysts may suddenly produce severe unilateral visual deficits if the cyst erodes the lateral orbital wall. These deficits may rapidly revert to normal if surgical action is not delayed. If surveillance MRIs of sylvian arachnoid cysts show a narrowing of the conus diameter compared to the contralateral side, a yearly ophthalmological surveillance examination seems to be warranted in else wise asymptomatic patients ²⁾.

Case series

A retrospective review of the database of operative procedures revealed 24 procedures (20 endoscopic and 4 microsurgical procedures) to fenestrate a Sylvian fissure arachnoid cyst (SAC) at university hospitals in Berlin, Germany and Tokyo, Japan.

With the applied technique, a reduction of SAC volume of more than 10% was achieved in 83.3% of all patients. The median volume of SACs (n = 24) was significantly reduced from 83.5 mL (range 21-509 mL) preoperatively to 45.5 mL (range 8.4-261 mL; $P < 0.01$) after 3.5 months and to 29.0 mL (range 0-266 mL; $P < 0.01$) after 15 months. In children (n = 8) with a ruptured SAC the combined extraaxial volume of a SAC and accompanying hygroma/hematoma was reduced from 166 mL (range 111-291 mL) before surgery to 127 mL (range 87-329 mL) after 2 months and to 77 mL (range 25-140 mL; $P < 0.05$) after 11 months. Acute clinical symptoms were generally resolved postoperatively; headaches were resolved or improved in 75%. A significant association of resolution or improvement of headaches and volume reduction was demonstrated.

The 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 ³⁾.

Thirteen adult patients were operated on for symptomatic [arachnoid cysts](#) in the left temporal fossa; seven with an internal shunt procedure during local anaesthesia, and five with a craniotomy with [fenestration](#) of the cyst to the [basal cisterns](#). In one patient, an initial internal shunt was transformed to a [cystoperitoneal shunt](#). After surgery, all patients experienced relief of symptoms. Reduction of cyst volume occurred in 11 patients. The patients were tested for brain asymmetries related to language and [verbal memory](#) before and after operation, with a dichotic listening technique with simultaneous presentation of different auditory stimuli to the two ears. In the preoperative memory test, the patients showed impaired total recall compared with healthy control subjects, and recall from the right ear was significantly impaired. The patients also performed poorly in a forced attention task consisting of dichotic presentations of consonant-vowel syllables. In addition to clinical improvement, the surgical procedures led to improvements in both dichotic perception and memory. Overall memory performance was enhanced, mainly because of improved recall from the right ear.

This normalisation of memory function was found as early as four hours after the operation. The results indicate that arachnoid cysts in the left temporal fossa may impair [cognitive function](#), that neuropsychological tests are necessary to disclose these impairments, and that cognitive improvement occurs after surgery ⁴⁾.

Case reports

2016

A case of multiple remote-site intra-parenchymal haemorrhage as a rare complication after surgical decompression of a sylvian fissure arachnoid cyst ⁵⁾.

2013

Lohani et al., present the case of an 11-year-old boy who presented after a week of progressive and severe back pain radiating to the back of his thighs. Imaging revealed a spinal subdural blood collection at the L4-S1 level. This finding prompted further cephalad imaging of the spine and the brain, which revealed a sylvian fissure arachnoid cyst with intracystic hemorrhage and frontoparietal subdural hematoma. The child did not have headache at this time, although he had experienced chronic headaches since the age of 4 years. He was treated with a course of oral steroids, which immediately relieved his back and leg pain. Subsequent imaging showed resolution of the cranial and spinal subdural blood collections and diminished size of the arachnoid cyst. No surgical treatment was necessary ⁶⁾.

Upadhyaya et al. report a case of a sylvian cistern arachnoid cyst presenting with precocious puberty in a 3-year-old girl. The child recovered following a cystoperitoneal shunt. The mass effect of the arachnoid cyst upon the hypothalamus was, at least in part, responsible for the development of precocious puberty. To the best of the knowledge, this is the 1st case of a sylvian cistern arachnoid cyst presenting with precocious puberty. The role of surgical decompression of the cyst is also discussed ⁷⁾.

Prokopienko et al., report the case of a 36-year-old woman with a Sylvian fissure arachnoid cyst, which diminished after head trauma and minor hemorrhage into the cyst. They discuss the relationship between the cyst volume reduction and the head trauma to determine the main mechanism of this self-healing process ⁸⁾.

2006

Intraparenchymal hemorrhage after surgical decompression of a Sylvian fissure arachnoid cyst ⁹⁾.

1995

A case of brain stem hemorrhage after decompression of a sylvian fissure arachnoid cyst has been reported ¹⁰⁾.

1) 4)

Wester K, Hugdahl K. Arachnoid cysts of the left temporal fossa: impaired preoperative cognition and postoperative improvement. *J Neurol Neurosurg Psychiatry*. 1995 Sep;59(3):293-8. PubMed PMID: 7673959; PubMed Central PMCID: PMC486033.

2)

Kural C, Kullmann M, Weichselbaum A, Schuhmann MU. Congenital left temporal large arachnoid cyst causing intraorbital optic nerve damage in the second decade of life. *Childs Nerv Syst*. 2015 Aug 9. [Epub ahead of print] PubMed PMID: 26255149.

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 Aug;84(2):327-36. doi: 10.1016/j.wneu.2015.03.026. PubMed PMID: 25818148.

5)

Ramachandran GM, Nair RP, Kongwad LI, Shanthakumar G. Rapid Brain Shift with Remote-Site Haemorrhage after Arachnoid Cyst Excision: Treatment Dilemmas. *Pediatr Neurosurg*. 2016 Dec 3. [Epub ahead of print] PubMed PMID: 27915350.

6)

Lohani S, Robertson RL, Proctor MR. Ruptured temporal lobe arachnoid cyst presenting with severe back pain. *J Neurosurg Pediatr*. 2013 Sep;12(3):281-3. doi: 10.3171/2013.6.PEDS13122. PubMed PMID: 23829378.

7)

Upadhyaya S, Nair R, Kumar V, Nayal B, Shetty A. Sylvian cistern arachnoid cyst - a rare cause of precocious puberty. *Pediatr Neurosurg*. 2013;49(6):365-8. doi: 10.1159/000368323. Epub 2014 Nov 21. PubMed PMID: 25428575.

8)

Prokopienko M, Kunert P, Marchel A. Unusual volume reduction of Galassi grade III arachnoid cyst following head trauma. *J Neurol Surg A Cent Eur Neurosurg*. 2013 Dec;74 Suppl 1:e198-202. doi: 10.1055/s-0033-1342931. PubMed PMID: 23696293.

9)

Esmaeeli B, Eftekhari B. Intraparenchymal hemorrhage after surgical decompression of a Sylvian fissure arachnoid cyst. *Neurol India*. 2006 Sep;54(3):320-1. PubMed PMID: 16936408.

10)

Borges G, Fernandes YB, Gallani NR. [Brainstem hemorrhage after surgical removal of arachnoid cyst of the Sylvian fissure: A case report]. *Arq Neuropsiquiatr* 1995;53:825-30.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=sylvian_fissure_arachnoid_cyst

Last update: **2024/06/07 02:54**

