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Experiences with arachnoid cysts in children

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Background

Arachnoid cysts are relatively rare. True cysts are congenital. Secondary cysts may result from postinflammatory accumulation of CSF in the subarachnoid space. This examination focussed exclusively on primary cysts. There is a controversy regarding the role and the type of surgery indicated in its treatment. The distribution, clinical features and treatment modalities in different types of arachnoid cysts in our patients are analysed in this study.

Material

Nineteen children were treated ranging from 1 month to 10 years of age.

The follow-up-period was 11 years, ranging from 3 month to 19 years. Cyst locations were temporal fossa (n = 7), convexity (n = 4), sellar region (n = 1) and infratentorial (n = 7). Conservative management has been carried out for 4 children who did not demonstrate any signs of increased ICP or focal neurological impairment. 15 Patients underwent surgery (Table. 1).

Results

With exception of 3 incidental findings all cases became symptomatic. Due to cyst enlargement with pressure signs or bleeding most cases in our series showed symptoms like headache, seizure, hygroma or endocrinologic disturbances. Long-time pressure effects from arachnoid cysts lead to secondary pathological changes. The main consequence of infratentorial cysts was an obstructive hydrocephalus. Children with cysts in the posterior fossa were younger than 1 year of age at diagnosis. 6 of 7 children with infratentorial cysts developed a progressive hydrocephalus. In contrast, children with supratentorial cysts were significant older (mean 4 3/12 years) at time of diagnosis. Surgery was urgently indicated because of the development of subdural haematoma or hygroma after minor head trauma for 2 children with temporal cysts.

Shunting device implantation in the cysts was successful for cerebral convexity cysts in 2 and for temporal cysts in 3 children. One open and one endoscopic fenestration of convexity cysts required additional shunt insertion caused by clinical symptoms of increased ICP and cyst enlargement, respectively.(Fig. 1).

3 cystoperitoneal shuntings and one open fenestration for infratentorial cysts required subsequent ventriculoperitoneal shunt placement in 3 cases. Epilepsy an seizure disorders without obvious intracranial pressure signs occurred in 4 children. The incidence of seizure disorders was equivalent to the incidence in isolated hydrocephalus

Table 1:

	temporo fossa	convexity	sellar region	infratentorial
Neuroendoscopic fenestration		1		
Cystoperitoneal shunting	3	2		3
Open fenestration		1		1
Ventriculoperitoneal shunting	1		1	2
Conservative management	3			1

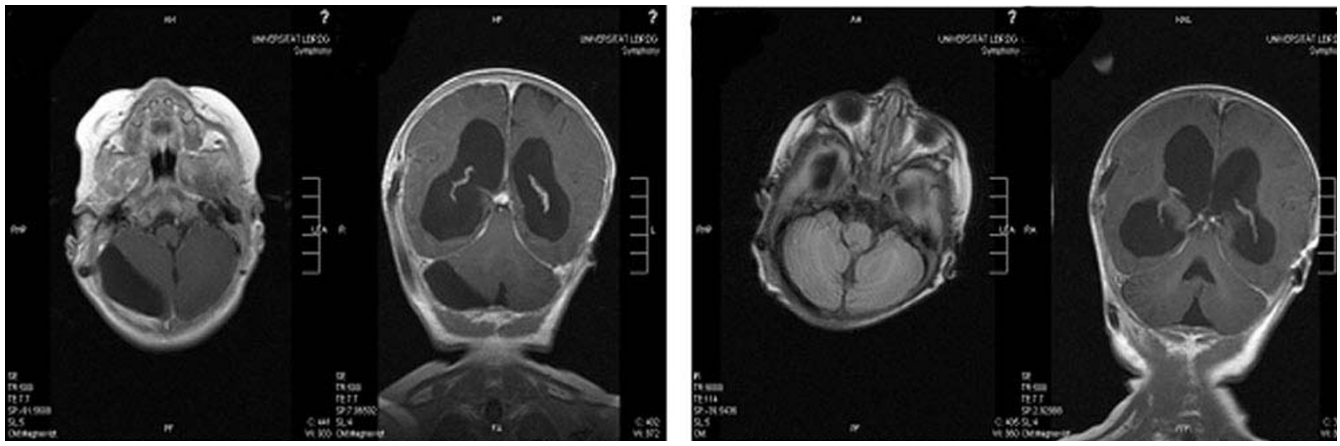

Figure 1
TS, 12.01.04 CT scan of an infratentorial posterior fossa arachnoid cyst with obstructive hydrocephalus. Although successful open fenestration the rather progressive hydrocephalus required shunting.

patients. Electroencephalographic findings did not correspond to the site of the cysts in the most cases. Attention-deficit-hyperactivity-disorders were detectable in one child with a prepontine cyst and one child with a cyst in the sellar region.

After treatment endocrine dysfunction and neurological deficits did not disappeared completely.

Conclusion

Absolute indications for surgery are the presence of progressive hydrocephalus or intracranial hypertension. Neuroendoscopic fenestration of ventricle-related cysts with or without internal shunting should be tried. In peripheral cysts the insertion of a cystoperitoneal shunt is proved as a save method.

References

1. Arai H, Sato K, Wachi A, Okuda O, Takeda N: **Arachnoid cysts of the middle cranial fossa: experience with 77 patients who were treated with cystoperitoneal shunting.** *Neurosurgery* 1996, **39(6):**1108-12. discussion 1112–3
2. McBride LA, Winston KR, Freeman JE: **Cystoventricular shunting of intracranial arachnoid cysts.** *Pediatr Neurosurg* 2003, **39(6):**323-9.