2016

35 cases of SAC treated between 1996 and 2014. Patient records and imaging studies were reviewed retrospectively to assess symptomatology, radiological findings, treatment, and long-term follow-up.

Fourteen SAC were diagnosed prenatally (39%). They observed 15 (43%) cases presenting hydrocephalus (SAC-1) removing Liliequist membrane downward. Lower forms (SAC-2) with free third ventricle were observed in 11 (31%) cases. Asymmetrical forms (SAC-3) with Sylvian or temporal extension were seen in the 9 (26%) remaining patients. Twenty-three (66%) patients were treated by ventriculocisternostomy, 3 (8.5%) by shunt surgery, and 3 (8.5%) by craniotomy. Six (17%) patients had no surgery, including 5 cases (14%) that had prenatal diagnosis. Outcomes were initially favorable in 26 cases (87%). Eight (22%) patients had endocrine abnormalities at the end of the follow-up, 3 (8.5%) had developmental delay, and 6 (17%) had minor neuropsychological disturbances.

SAC are heterogeneous entities. SAC-1 may come from an expansion of the diencephalic leaf of the Liliequist membrane. SAC-2 show a dilatation of the interpeduncular cistern and correspond to a defect of the mesencephalic leaf of the Liliequist membrane. SAC-3 correspond to the asymmetrical forms expanding to other subarachnoid spaces. Surgical treatment is not always necessary. The recognition of the different subtypes will allow choosing the best treatment option [1)].

2015

Three cases with bobble-head doll syndrome associated with a large suprasellar arachnoid cyst and obstructive hydrocephalus, which were treated with endoscopic cystoventriculocisternostomy and marsupialization of the cyst [2)].

2013

4 cases of suprasellar prepontine arachnoid cysts in which a slit valve was identified. The patients presented with hydrocephalus due to enlargement of the cyst. The valve was located in the arachnoid wall of the cyst directly over the basilar artery. Halani et al believe this slit valve was responsible for the net influx of CSF into the cyst and for its enlargement. They also present 1 case of an arachnoid cyst in the middle cranial fossa that had a small circular opening but lacked a slit valve. This cyst did not enlarge but surgery was required because of rupture and the development of a subdural hygroma. One-way slit valves exist and are a possible mechanism of enlargement of suprasellar prepontine arachnoid cysts. The valve was located directly over the basilar artery in each of these cases. Caudad-to-cephalad CSF flow during the cardiac cycle increased the opening of the valve, whereas cephalad-to-caudad CSF flow during the remainder of the cardiac cycle pushed the slit opening against the basilar artery and decreased the size of the opening. Arachnoid cysts that communicate CSF via circular, nonslit valves are probably more likely to remain stable [3)].

2011

73 consecutive patients who were treated between June 2002 and September 2009. Twenty-two patients were treated with VC and 51 with VCC. Outcome was assessed by clinical examination and

magnetic resonance imaging.

The patients were divided into five groups based on age at presentation: age less than 1 year (n = 6), 1-5 years (n = 36), 6-10 years (n = 15), 11-20 years (n = 11), and 21-53 years (n = 5). The main clinical presentations were macrocrania (100%), motor deficits (50%), and gaze disturbance (33.3%) in the age less than 1 year group; macrocrania (75%), motor deficits (63.9%), and gaze disturbance (27.8%) in the 1-5 years group; macrocrania (46.7%), symptoms of raised intracranial pressure (ICP) (40.0%), endocrine dysfunction (40%), and seizures (33.3%) in the 6-10 years group; symptoms of raised ICP (54.5%), endocrine dysfunction (54.5%), and reduced visual field or acuity (36.4%) in the 11-20 years group; and symptoms of raised ICP (80.0%) and reduced visual field or acuity (40.0%) in the 21-53 years group. The overall success rate of endoscopic fenestration was 90.4%. A Kaplan-Meier curve for long-term efficacy of the two treatment modalities showed better results for VCC than for VC (p = 0.008).

Different age groups with SSCs have different main clinical presentations. VCC appears to be more efficacious than VC [4].

2009

4 suprasellar arachnoid cysts, diminished for different degrees after operation. There were no surgery-related serious complications or deaths. There were not cyst enlarged and stoma obstructed cases [5].

2006

Crimmins et al reported on 7 patients treated with ventriculocystostomy (VC) and 13 patients with ventriculocystocisternotomy (VCC). They found VCC had a higher success rate but the difference was not statistically significant [6].

2004

Wang et al. retrospectively reviewed six cases, in which endoscopic ventriculocystocisternotomy was performed, to identify specific neuroimaging features that aid both the accurate diagnosis of this entity and the postoperative assessment of fenestration patency.

Six consecutive children underwent treatment for suprasellar arachnoid cysts. Consistent radiographic features in all cases were identified. Through a single entry site, endoscopic fenestration was performed at both the apical and basal cyst membranes. Outcome was assessed using clinical examination, quantitative changes in cyst size, and triplanar magnetic resonance (MR) imaging with flow-sensitive (long TR) sequences. In every case, the suprasellar cysts displayed three diagnostic MR imaging features: 1) vertical displacement of the optic chiasm/tracts; 2) upward deflection of the rostral mesencephalon and mammillary bodies; and 3) effacement of the ventral pons. Two patients initially underwent placement of a ventriculoperitoneal shunt before the cysts were recognized, but MR images obtained after shunt placement revealed the cysts. In a mean follow-up period of 26.2 months, all patients improved clinically. Postoperative imaging revealed a mean cyst volume decrease of 52.7% and a return to more normal suprasellar and prepontine anatomy. Flow-sensitive

MR imaging confirmed pulsation artifact at all 12 fenestration sites. There was no surgery-related death and no additional cerebrospinal fluid diversion procedure was required.

To aid in the accurate diagnosis of prepontine arachnoid cysts, the authors identified several pathognomonic features on sagittal MR images: vertical deflection of the optic chiasm and mammillary bodies, as well as pontine effacement. Dual endoscopic fenestration into the intraventricular compartment and basal cistern is safe, and it effectively provides symptomatic relief by decreasing the cyst size. Triplanar flow-sensitive MR imaging sequences can confirm fenestration patency without the need for cine-mode MR imaging [7)].

2001

Seven patients who had endoscopic treatment; five were children under 15 years old who presented with delayed development and/or enlarged heads. The two adult patients, both of whom had insertion of shunts as children, presented with headache and vomiting due to shunt blockage. All patients improved following endoscopic cyst fenestration. There was no operative morbidity and there have been no relapses to date [8)].

1999

Two cases of partial excision of the cyst wall, through a pterional craniotomy, establishing communication with the basal subarachnoid spaces was carried out. The endocrinological symptoms regressed after surgery [9)].

1989

Five children with ventricular dilatation (4 boys, 1 girl) had features seen on computer tomographic scan that were consistent with suprasellar arachnoid cysts. All children were investigated with a CT ventriculogram and/or CT cisternogram, and no communication with the cyst was demonstrated. Three children were seen in the 1st year of life and the remaining 2 children were between 1 and 5 years of age. Hydrocephalus and developmental delay were the most common presenting features, followed by visual disturbance, squint, or ataxia. Direct surgical decompression was performed in all 5 patients to avoid long-term placement of a ventriculoperitoneal shunt. A temporary shunt was placed in 2 children because of high intracranial pressure. Direct partial excision of the cyst wall to allow long-term drainage into the basal cisterns or ventricular system was successful in all children. The presence of subdural collections postoperatively required temporary shunting in 2 children. After follow-up for between 10 and 22 months no clinical endocrinological sequelae have been detected, but 2 children have raised serum prolactin levels. Three children are developmentally delayed; one of these has regained some skills since surgery [10)].

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