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Evaluation of the use of stents to augment endoscopic fenestration of cranial arachnoid cysts

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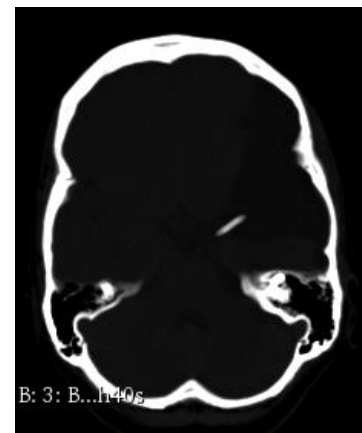
Introduction and aims

- Endoscopic fenestration is widely used for the treatment of intra-cranial arachnoid cysts.
- Reported rates of stenosis requiring re-operation include 3.7%¹ and 8.8%².
- The aim of this study was to assess the effectiveness of incorporating stents into the endoscopic fenestration of arachnoid cysts.

1. Ali M, Bennardo M, Almenawer S, Zagzoog N, Smith A, Dao D, et al. Exploring predictors of surgery and comparing operative treatment approaches for pediatric intracranial arachnoid cysts: a case series of 83 patients. *J Neurosurg Paed.* 2015;16:275-82.
2. Couvreur T, Hallaert G, Heggen TVD, Baert E, Dewaele F, Okito J, et al. Endoscopic Treatment of Temporal Arachnoid Cysts in 34 Patients. *World Neurosurg.* 2015;64(3):734-40.

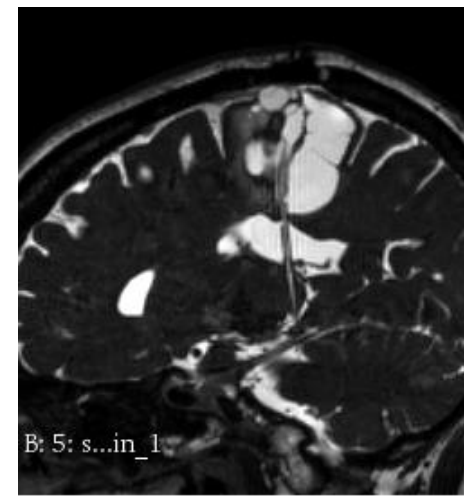
Method

- 2005-2016.
- Retrospective case note review.
 - Demographics, surgical intervention, pre-and post-operative symptoms, re-operation rates and complications
- Cyst volumes pre- and post-operative were measured using 3D Slicer.



Results

- 46 endoscopic procedures (8 with stents, 38 without) on 43 patients.
- Age: 28.7 years \pm 27.3.
- Gender: 22 male (51.1%).
- 5 stents in primary fenestrations, 3 for redo-fenestration.
- Locations.



Results

- Non-stented patients had a higher re-operation rate (8/38 vs 1/8, $p=1.0$).
 - 3 x re-fenestrations, 5 shunts vs 1 x shunt.
- Post-operative clinical improvement was comparable between the stented and non-stented groups (75.0% vs 81.1%, $p=0.57$).
- Stents had a greater reduction in the cyst size ($53.8\% \pm 38.6\%$ vs $24.1\% \pm 113.5\%$, $p=0.40$).
- No stent related complications.



Conclusions

- Endoscopic fenestrations incorporating stents had a lower rate of re-fenestration for treatment failure.
- Clinical outcomes are comparable with no stent related complications.
- The trend suggests that stents result in a greater volume reduction and decompression of the cyst.



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Any questions?