

Retroclival arachnoid cyst with hemifacial spasm

Bonde V, Muzumdar D, Goel A

ABSTRACT

Arachnoid cysts are rare lesions occurring anywhere in the cerebrospinal axis. The sylvian fissure remains the most favoured site for their occurrence, followed by cerebellopontine angle, suprasellar, and quadrigeminal cisterns. Retroclival arachnoid cysts are very rare. We report a retroclival arachnoid cyst with bilateral cerebellopontine angle extensions with hemifacial spasm in a 26-year-old woman. The patient underwent surgery and her hemifacial spasm improved.

Keywords: arachnoid cysts, cerebellopontine lesion, hemifacial spasm, prepontine arachnoid cyst, retroclival arachnoid cyst

Singapore Med J 2008; 49(10):e281-e282

INTRODUCTION

Arachnoid cysts are rare lesions, accounting for 1% of all intracranial tumours.⁽¹⁾ They are thought to be developmental in origin and can present at any age. Retroclival or prepontine location for arachnoid cysts is very rare.⁽¹⁾ It usually extends superiorly to the interpeduncular cistern, and laterally to the cerebellopontine angle. Usually it presents as obstructive hydrocephalus, weakness and stiffness in all four limbs and variable cranial nerve involvement depending on its extensions. Symptoms and signs may fluctuate and it may be mistaken as a demyelinating disease.⁽¹⁾ Hemifacial spasm due to retroclival cyst is extremely rare; we could not locate any such case in the literature.

CASE REPORT

A 26-year-old woman presented to us with a ten-year history of right hemifacial spasm, which was controlled with botulinum injections. This time, she had a similar hemifacial spasm for the last two months. On examination, she had right sensorineural hearing loss, right hemifacial spasm and ataxia. Magnetic resonance (MR) imaging showed a retroclival cyst vertically extending all the way from the suprasellar region, over the clivus, up to the level of the body of the axis (Figs. 1 & 2). It also extended into the both cerebellopontine angles, more on the right side (Fig. 3). She underwent retrosigmoid craniectomy in the sitting position. Intraoperatively, the VII–VIII complex was found skirting over the cyst, and the anterior inferior cerebellar artery was in close proximity with the

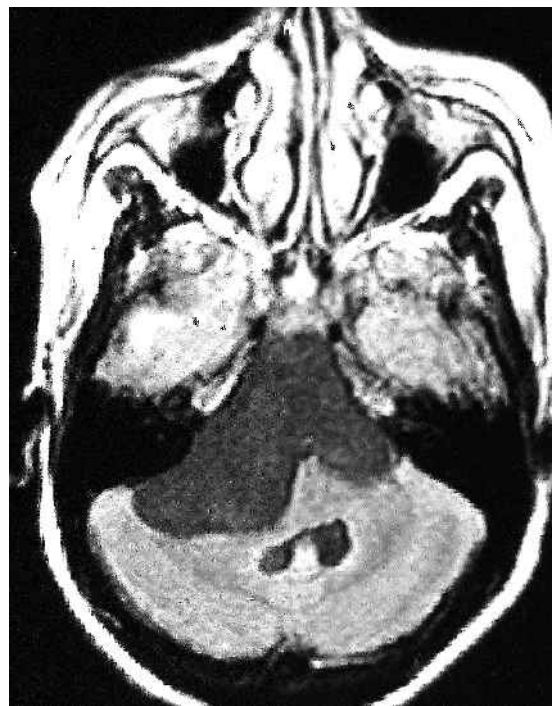


Fig. 1 Axial T1-W MR image shows a retroclival cyst with bilateral cerebellopontine angle extensions.

nerve complex. Wide marsupialisation of the cyst was performed. The arachnoid membrane over the VII–VIII complex and the anterior inferior cerebellar artery were dissected. After dissection, the arterial loop remained away from the nerve complex, no interposition of any material was required. Postoperatively, she had improvement in the hemifacial spasm and ataxia.

DISCUSSION

Arachnoid cysts are benign developmental cysts that occur in the cerebrospinal axis in relation to the arachnoid membrane. Primary or true (congenital) arachnoid cysts can be defined as a collection of the fluid within the arachnoid membrane because of splitting or duplication of the membrane. Arachnoid cysts appear hypodense on computed tomography and are hyperintense on T2-weighted and hypointense on T1-weighted MR imaging.⁽¹⁾ Unlike epidermoids, they are hypointense on diffusion-weighted images. Arachnoid cysts show homogeneous intensity and usually do not have septae.⁽¹⁾ These cysts most commonly occur in the sylvian fissure.⁽¹⁾ They also occur in a few other sites, viz. suprasellar, quadrigeminal, cerebellopontine angles, cerebral convexity, vermian and cisterna magna. The retroclival region is the most uncommon site for arachnoid cysts.⁽¹⁾ It may extend superiorly to the interpeduncular cistern and laterally to the

Department of
Neurosurgery,
Seth GS Medical
College,
King Edward VII
Memorial Hospital,
Parel,
Mumbai 400012,
India

Bonde V, MCh

Muzumdar D, MCh

Goel A, MCh

Correspondence to:
Dr Vivek R Bonde
Tel: (91) 22 2412 9884
Fax: (91) 22 2414 3435
Email: drvrbonde@
rediffmail.com



Fig. 2 Sagittal T1-W MR image shows a retroclival cyst extending from the dorsum sellae to the body of the C2 vertebra, displacing the brain stem posteriorly.



Fig. 3 Axial T2-W MR image shows a retroclival arachnoid cyst with bilateral cerebellopontine angle extensions, and its relation to the VIIth-VIIIth nerves.

cerebellopontine angle. Arachnoid cysts can be treated most commonly by marsupialisation or fenestration, and connecting it with the surrounding cisterns. It is advisable to avoid shunts, wherever possible.

Classical hemifacial spasm involves the orbicularis oculi muscles, and subsequently progresses downwards. Usually in classical hemifacial spasms, the offending vascular loop is on the antero-caudal aspect of the nerve.⁽¹⁾ Atypical hemifacial spasm starts in the orbicularis oris and spreads upwards. Hemifacial spasms might be associated with cerebellopontine angle tumours like acoustic schwannoma, epidermoid, meningioma or might be due to arteriovenous malformation in that region.⁽¹⁻⁴⁾ In the absence of cerebellopontine angle pathology, it is taken as either due to arterial loop compression or idiopathic. In such cases, microvascular decompression of the faciovestibulocochlear nerve complex remains the treatment of choice with good outcome. There are few case reports of hemifacial spasm with cerebellopontine angle arachnoid cysts.⁽²⁻⁴⁾

In the case discussed, the arachnoid cyst was huge, extending all the way from the suprasellar region to the foramen magnum and with bilateral cerebellopontine angle extensions. It had presented with similar symptoms previously, which resolved after treatment but recurred after ten years, indicating the slow progress of the cyst. Right-sided cerebellopontine angle component of the arachnoid cyst was larger, which presented as hemifacial spasm. The hemifacial spasm in this case was due to its cerebellopontine angle component causing approximation of the anterior inferior cerebellar artery and nerve complex. Nerve

and artery were dissected out, after draining the cyst. As after the dissection, the vascular loop was lying away from the nerve, there was nothing interposed in-between. Our patient recovered from all the symptoms except for hearing loss. There was no hemifacial spasm postoperatively, even after follow-up of seven years. Nowadays, with the advent of new flexible endoscopes, intracranial arachnoid cysts can be managed with minimally-invasive techniques. Suprasellar and quadrigeminal arachnoid cysts are mainly tackled with the endoscopes but there are many reports of it being used in retroclival and cerebellopontine angle arachnoid cysts as well.⁽⁵⁻⁷⁾ Arachnoid cysts are slow-growing lesions. Retroclival and cerebellopontine angle region arachnoid cysts rarely can present as hemifacial spasm, which is completely curable by a simple surgical procedure like marsupialisation.

REFERENCES

1. Rengachary SS, Kennedy JD. Intracranial arachnoid and ependymal cysts. In: Wilkins RH, Rengachary SS, eds. *Neurosurgery*. Vol III. New York: McGraw Hill, 1996: 3709-28.
2. Higashi S, Yamashita J, Yamamoto Y, Izumi K. Hemifacial spasm associated with a cerebellopontine angle arachnoid cyst in a young adult. *Surg Neurol* 1992; 37:289-92.
3. Altinörs N, Kars Z, Cepo lu C. Rare causes of hemifacial spasm. Report of two cases. *Clin Neurol Neurosurg* 1991; 93:155-8.
4. Rousseaux M, Lesoin F, Dhellemmes P, Jomin M. Retroclival cysts. Report of two cases. *Neurochirurgia (Stuttg)* 1986; 29:244-7.
5. Dwarakanath S, Suri A, Mahapatra AK, et al. Endoscopic assisted excision of a retroclival arachnoid cyst presenting as hysterical breathlessness. *Childs Nerv Syst* 2006; 22:424-7.
6. Abbott R. The endoscopic management of arachnoidal cysts. *Neurosurg Clin N Am* 2004; 15:9-17.
7. Jannetta PJ. Posterior fossa neurovascular compression syndromes other than neuralgias. In: Wilkins RH, Rengachary SS, eds. *Neurosurgery*. Vol III. New York: McGraw-Hill, 1996: 3227-33.