

Large Posterior Fossa Arachnoid Cyst

Jae Y Lim, MD, Neurosurgery, Reston Hospital Center, Virginia

Clinical Presentation

Patient is a 55 y/o male with a history of chronic migraines who started having severe headaches beyond his normal. Over the 6 months prior to surgery, his headaches occurred with increased frequency and severity. These were associated with new symptoms including photo-sensitivity, nausea, vomiting, sleep impairment, mental fog, and word finding difficulties. Attempts at medical management by his neurologist failed, and he started having difficulty performing his duties as an attorney at the DOJ. He had to miss multiple days of work due to these symptoms.

Pre-operative brain MRI (Figure 1) showed a large arachnoid cyst in the dorsal posterior fossa involving both sides. Atrophy/agenesis of the cerebellum was present. Head CT (Figure 2) showed remodeling of the inner table of the calvarium on the left from the underlying cystic lesion in the posterior fossa.

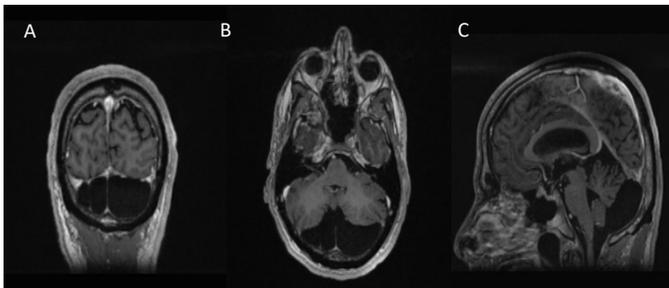


Figure 1: (A) Coronal, (B) Axial, and (C) Sagittal views of pre-operative MRI.

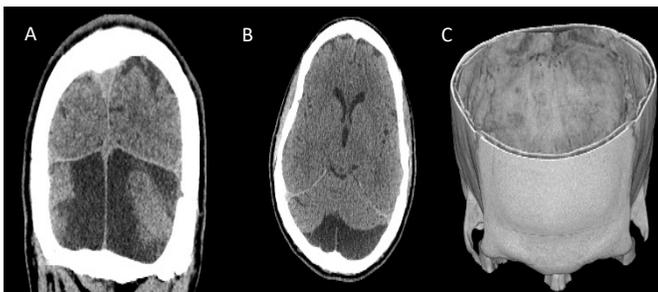


Figure 2: (A) Coronal and (B) Axial pre-op CT. (C) 3D representation of calvarium restructuring.



Figure 3: Mock OR demonstrating Modus V positioning.

Surgical Management

The surgical goal was to use the exoscope, Modus V™ (Figure 3), to visualize the posterior fossa cyst fully, without performing an overly large sub-occipital craniotomy. We were able to visualize the rostral aspect of the cyst with adhesions to the tentorium (Figure 4) despite limiting the craniotomy to the bottom half of the posterior fossa. We were able to angle the exoscope up from the floor for visualization.

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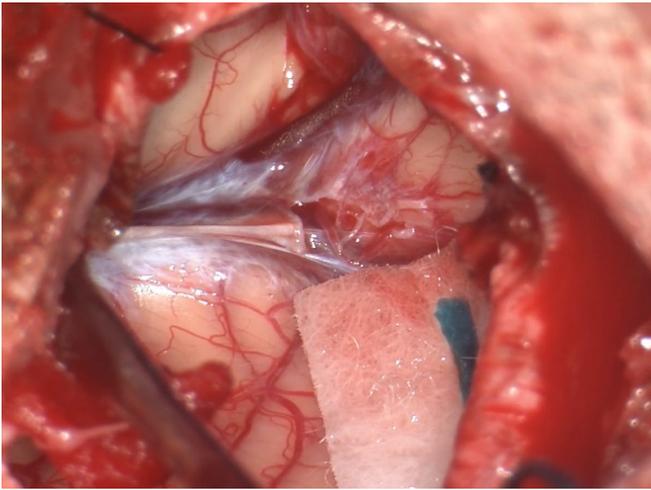


Figure 4A) Intra-operative imaging of the posterior fossa.

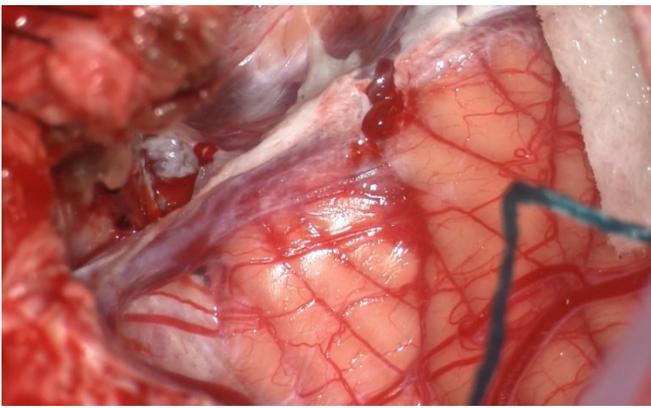


Figure 4B) Rostral aspect of the cyst with tentorial lesions.

Conclusion

The craniotomy size was minimal but full visualization of the posterior fossa was possible with Modus V while maintaining optimal ergonomics for the surgeon and OR staff. Complete resolution of pre-operative symptoms was observed, including headaches, vertigo, dizziness, speech difficulty and photophobia.