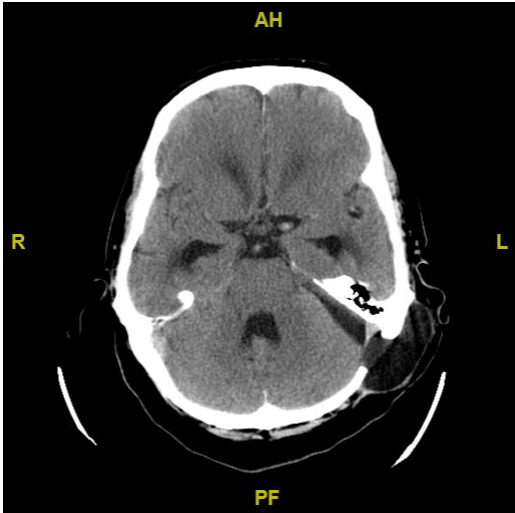


Introduction

Hydrocephalus is a recognised complication of surgical interventions in the posterior fossa. It is rarely considered in the risk profile of microvascular decompressions, but there has been increasing recognition recently that it may be more common than first thought. Multiple large case series have been undertaken and published, but the complications discussed relate to neuropraxia, mortality and CSF leaks, with little mention of hydrocephalus.

We undertook this retrospective study to examine the incidence of post operative hydrocephalus in our patients undergoing microvascular decompression for trigeminal neuralgia or facial spasm.

Acute Hydrocephalus following left MVD



Acute onset of hydrocephalus 48 hours after left microvascular decompression of the Vth cranial nerve

Methods

We undertook a retrospective study of all patients undergoing microvascular decompression of the fifth or seventh cranial nerves at our institution between 2005 and 2015.

Results

156 underwent decompression of the trigeminal nerve, and 24 the facial nerve. 9 patients subsequently developed hydrocephalic symptoms requiring permanent CSF diversion. Two presented with acute hydrocephalus within five days of operation, whilst the others displayed a more insidious onset between two weeks and a year. Five patients underwent standard ventriculo-peritoneal shunt insertion, and four lumbo-peritoneal shunting with the decision being related to surgeon preference. All patients improved clinically following insertion of a shunt.

There was no link observed between symptomatic post operative haematoma, infection, or revision surgery in the incidence of hydrocephalus in our patient population. We were unable to investigate any link between any surgical blood loss at the time of surgery and risk of hydrocephalus due to the retrospective nature of the study.

Conclusions

Hydrocephalus is infrequently mentioned in the vast majority of case series. Some reports have suggested a rate in the low single digits which is consistent with our documented rate of 5%. Potential mechanisms for hydrocephalus post MVD include low grade infection (though intraoperative CSF samples remained sterile after culture), intra/post op haemorrhage, alterations in venous drainage, or inflammatory changes as a reaction to surgical materials. We have not demonstrated a link between symptomatic hydrocephalus and other post operative complications, though the numbers are far too small to draw any conclusive links. It remains possible that we have overdiagnosed hydrocephalus and thus been overly aggressive treating it. We suspect our inclination to initially manage the stable patient with repeated lumbar punctures would reassure on this matter, as might the clinical improvements noted in patients following CSF diversion.

Hydrocephalus remains a significant, and perhaps underappreciated complication of microvascular decompression, and should certainly be discussed with patients during the consent process.

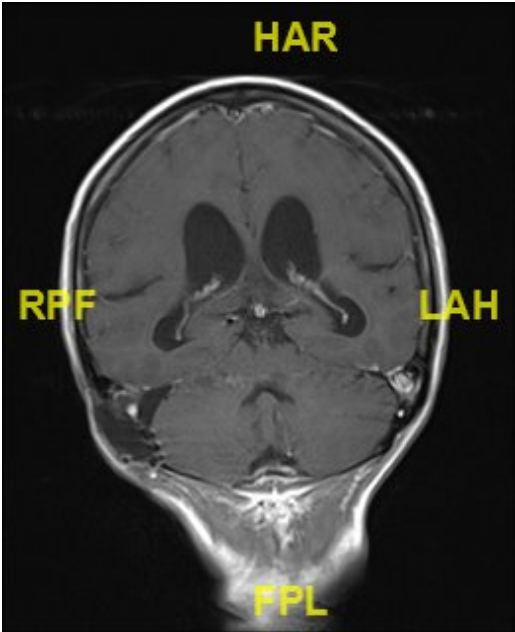
Learning Objectives

By the conclusion of this session, participants should appreciate the incidence of hydrocephalus following microvascular decompression, allowing them to better consent their patients.

References

Hydrocephalus: an underrated long-term complication of microvascular decompression for trigeminal neuralgia. A single institute experience.
Muratorio F, Tringali G, Levi V, Ligarotti GK, Nazzi V, Franzini AA.
Acta Neurochir (Wien). 2016 Nov;158(11):2203-2206.

Delayed presentation of hydrocephalus



Coronal image demonstrating pronounced psuedomeningocoele and dilated ventricles in a patient presenting 12 months after MVD with hydrocephalus