

Posterior Inferior Cerebellar Aneurysm Treatment Outcomes

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Introduction

Aneurysms of the posterior inferior cerebellar artery (PICA) are a rare cause of subarachnoid hemorrhage. Furthermore, their treatment is challenged by a high proportion of fusiform aneurysms and the tortuosity of the PICA. Similar to other intracranial aneurysms, the choice of surgical vs. endovascular treatment depends on patient characteristics and clinician expertise.

Synopsis

- PICA aneurysms are a rare cause of subarachnoid hemorrhage
- Treatment may be microsurgical or endovascular
- Patient characteristics, aneurysm location and dimensions along with surgical/institutional experience determines treatment choice
- In our institution, pts treated endovascularly had a trend toward shorter length of hospital stay

Methods

A single-center retrospective review of patients admitted to Vancouver General Hospital (VGH) with symptomatic PICA aneurysms is presented. Due to advances in endovascular management in the past two decades, data collection was limited to patients admitted between 2005 and 2015. Variables collected include patient demographics, clinical presentation, treatment complications and length of stay (LOS).

Results

A total of 54 patients were admitted with symptomatic PICA aneurysms during the study period. As shown in Table 1., there was a strong predilection toward females (77% of cases). Moreover, the mean age at presentation was 59 (SD 14). Finally, 39 patients (72%) presented with subarachnoid hemorrhage (SAH) with most having a Hunt-Hess (HH) score of II-IV.

Table 1. Patient Characteristics

Male	13 (23%)
Age	58 (15)
Ruptured Aneurysm	39 (72%)
Hunt-Hess SAH grade	
I	4
II	10
III	12
IV	10
V	3

Table 2. Treatment Outcomes

	Clipping	Coiling	Significance
Number treated	39 (72%)	11 (20%)	
Age	57.4y (SD 14y)	60.1 (SD 8.7y)	0.5 (NS)
PreOp HH grade >= IV	11/39	3/11	0.9 (NS)
Mean LOS	28.2 (41)	22.5 (19.8)	0.70 (NS)
Mortality	1	2	0.054 (NS)

Overall, 11 patients had endovascular treatment while 39 patients underwent microsurgical clipping/trapping of the aneurysm. The remaining patients only had a diagnostic cerebral angiogram. While patients in the endovascular group were slightly older, there was no statistically significant age, gender or SAH grade difference between treatment groups (Table 2).

Analysis of our data is limited by the small population size. However there is a trend toward higher mortality rate among coiling patients while the LOS is longer in patients undergoing surgical clipping.

Conclusions

We present a large series of patients who have undergone treatment for PICA aneurysms. Our institutional experience is fairly unique among North American centers in the preponderance of surgical management. Our data suggests a trend toward higher mortality in patients treated endovascularly.

Given the small sample size, the differences reported here may be a consequence of patient comorbidities which influenced treatment choice. However, individual patient/aneurysm characteristics and surgeon experience likely have the greatest influence on outcomes when treating patients with PICA aneurysms.

References

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PICA Aneurysms

