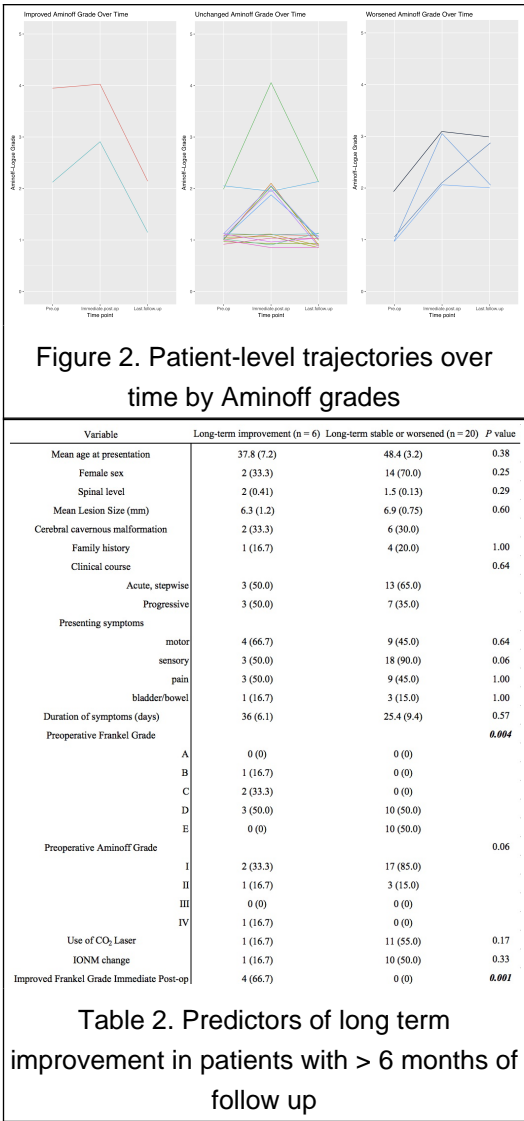
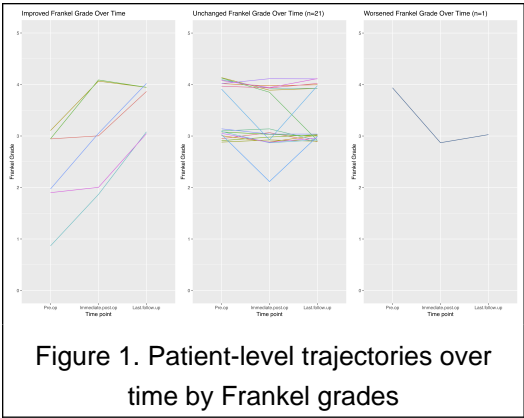


Introduction

Intramedullary spinal cord cavernous malformations (CMs) account for 5% of all CMs in the CNS and 5–12% of all spinal cord vascular lesions. The optimal management of spinal cord CMs continues to be controversial. We sought to identify factors associated with improved long-term functional outcome in patients with this rare cerebrovascular pathology.

Methods

Retrospective observational cohort study of 32 patients who underwent surgical resection for spinal CM from 1996–2017 at a single-institution. We evaluated immediate post-operative and long-term outcomes against pre-operative baseline status, as determined by Frankel and Aminoff-Logue Disability grades. Mean follow-up length was 40.9 months (SEM, 8.9).



Results

The mean age at presentation was 44.2 (range, 0.5-77 yrs). Symptoms included sensory deficits (n = 26, 81%), loss of strength/coordination (n = 16, 50%), pain (n = 16, 50%), and bladder/bowel dysfunction (n = 6, 19%). Thoracic (n = 16, 50%) and cervical CMs (n = 16, 50%) were equally common, with mean size of 7.1 mm (range, 1-20 mm).

Intra-operative neuromonitoring changes were associated with worsened Frankel grade (P = 0.03) but not with worsened Aminoff-Logue grade (P = 0.18), while use of a CO2 laser was associated with improved Frankel grade (P = 0.02), but not with improved Aminoff-Logue grade (P = 0.48) immediately following resection.

Long-term functional outcomes were improved in 6 (23%), unchanged in 19 (73%), and worsened in 1 (4%) patients. Poor pre-operative Frankel grade (P = 0.006) and improved Frankel grade immediately following resection (P = 0.001) were strongly associated with improvement from baseline at long-term follow up (Table 2).

Conclusions

Gross total resection of symptomatic spinal cord CMs can prevent further functional decline and may improve functional status for patients with poor pre-operative Frankel grades. Our experience suggests resection of spinal cord CMs can be achieved with excellent long-term outcomes and minimal surgical morbidity.

Learning Objectives

- Gross total resection of symptomatic spinal cord CMs can prevent further functional decline.
- Resection of spinal cord CMs may improve functional status for patients with poor pre-operative Frankel grades.

References

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