

Resolution of symptoms following surgical resection of meningioma

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Background

- Meningiomas account for ~1/3 of all primary CNS tumors
- Estimated 29,000 new cases in the US annually
- Increasing grade (I-III) has a correlation with worsening prognosis
- Surgical resection is considered the gold standard for treatment in symptomatic individuals regardless of grade
- Radiotherapy is commonly utilized with surgery (II & III)
- The basis of this study was to assess patient outcomes by comparing symptoms pre-operatively and their resolution post-operatively. Additionally, whether therapy/treatments should be considered by grade.

Methods

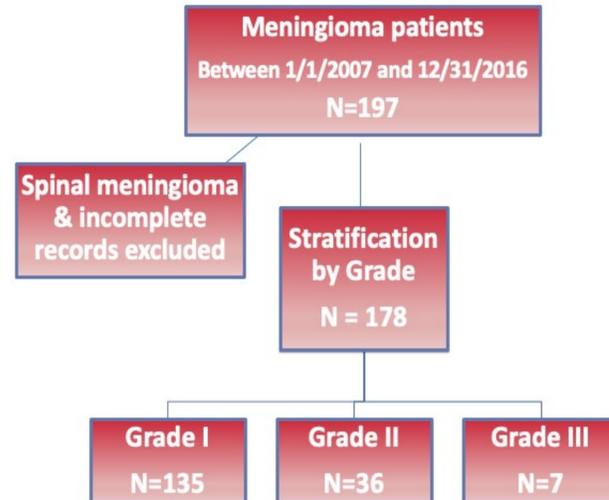


Figure 2. Methods. Demographic (age, race, gender, BMI) and clinicopathologic data were collected to include treatments, recurrences, imaging, and outcomes to date.

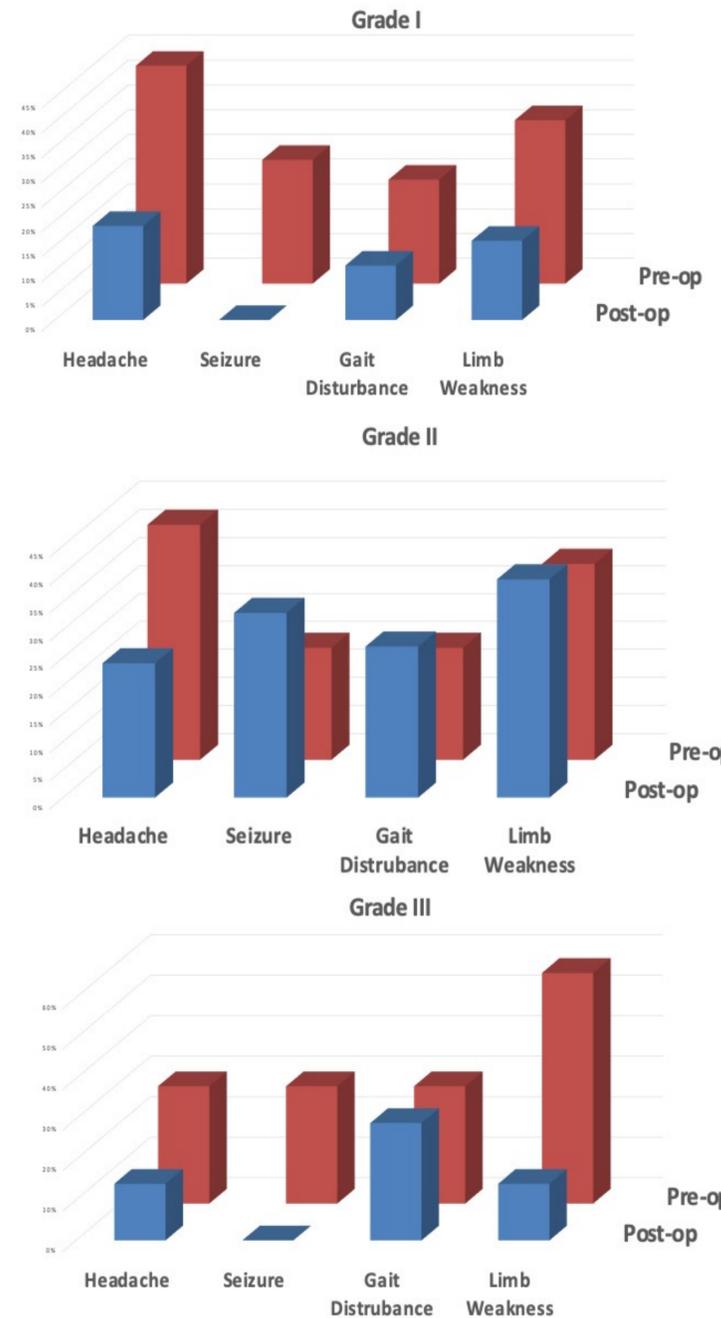
Demographics Stratified by Grade

Demographic	Grade I	Grade II	Grade III
Mean Age	67	67	67
Race			
Black	20%	25%	1%
White	80%	75%	85%
Sex			
Male	48%	50%	57%
Female	52%	50%	43%
Mean BMI	30.0	27.7	24.6



Figure 1. A large, aggressive, hypervascular meningioma of the anterior falx

Symptoms Pre-Op vs. Post-Op



Results and Discussion

The most common symptoms across all grades were headache, seizure, gait disturbance and limb weakness. Grade I patients experienced statistically significant symptom improvement postoperatively for all noted symptoms. Headaches decreased 25% ($p < 0.0001$), seizures 17.6% ($p = 0.0002$), gait disturbances 10% ($p = .03$), and limb weakness 17% ($p = 0.0019$). Interestingly, besides improvement in post-operative headache (18%), Grade II patients had worsening post-operative symptoms: seizures (13%), gait disturbances (7%), and limb weakness (4%). Grade III patients experienced symptom improvement in headaches (15%), seizures (29%) and limb weakness (43%) but saw no change in gait disturbances (remained 29%). These data suggest careful consideration regarding surgical resection for symptomatic meningioma patients, most specifically those with grade II lesions as surgery presented as a major morbidity for these patients. Further expansion on these data could help formulate prognostic stratification for meningioma resections to assist physicians in determining the best therapy for optimal patient outcomes.

Acknowledgments

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