

Epileptic Seizures and Ability to Work in Cavernous Angioma Located Within Eloquent Brain Areas

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Introduction

The post-operative outcomes and the predictors of seizure control are poorly documented for supratentorial cavernous angiomas within or close to eloquent brain area. We assessed the predictors of preoperative and post-operative seizure control and ability to work, and the safety of the surgery.

Methods

Multicenter international retrospective cohort analysis of adult patients benefitting from a functional-based surgical resection with intraoperative cortico-subcortical functional mapping using a direct electrostimulation technique under awake conditions as the first-line treatment for a solitary supratentorial cavernous angioma within or close to eloquent brain areas, with follow-up information regarding seizure control and MR imaging.

Results

In 109 patients (66.1% women; mean age 38.4 ± 12.5 years), we observed: 64.2% had epileptic seizures and 27.1% had uncontrolled seizures at the time of surgery; age at surgery >38 years ($p=0.018$) and time interval from diagnosis to surgery >12 months ($p=0.007$) are independent predictors of uncontrolled seizures at surgery; focal deficit ($p<0.001$) is an independent predictor of inability to work at time of surgery; history of epileptic seizures at surgery ($p=0.032$) and partial resection of the cavernous angioma and/or of the hemosiderin rim ($p<0.001$) are independent predictors of uncontrolled seizures post-operatively; and inability to work at surgery ($p=0.041$), KPS <70 ($p=0.047$), uncontrolled seizures post-operatively ($p<0.001$), and worsening of cognitive functions post-operatively ($p=0.029$) are independent predictors of inability to work post-operatively.

Conclusions

The functional-based surgical resection under awake conditions allows potentially safe resection of cavernous angioma and the peripheral hemosiderin rim within or near eloquent brain areas, with outcomes similar to those in non-eloquent areas.

Learning Objectives

Identifying predictors of seizure control and ability to work for adult patients harbouring cavernous angioma within eloquent area.

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