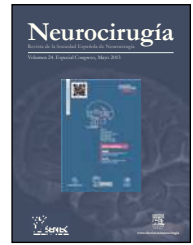




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MICROSURGERY AND RADIOSURGERY IN BRAINSTEM AND THALAMUS CAVERNOMAS: ALTERNATIVE OR COMPLEMENTARY TREATMENT OPTIONS?

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Introduction and objectives: We provide the results of a centre with a long-standing experience in the microsurgical resection and the Gamma Knife radiosurgical (GKRS) treatment of brainstem cavernous malformations.

Materials and methods: 67 patients were treated microsurgically (n = 29) or radiosurgically (n = 38). A minimum follow up of 2 years (7.7 years median) was established. A recent follow up was obtained for all patients.

Results: Statistical significant differences revealed that surgically treated patients more often showed significant hemorrhage, were mainly superficially seated but larger and presented with a

higher preoperative modified Rankin scale score (mRS). GKRS patients harbour smaller and deep seated lesions. In both treatment groups, patients presented with a significant better mRS score at time of follow up compared to the mRS score prior to intervention. Overall annual pre-operative hemorrhage rates were 3.2% among surgery and 2.3% among GKRS patients. The pre-operative re-hemorrhage rate amounted to 25.1% for surgery and 7.2% for GKRS patients in the observation period. In the first two years after GKRS the hemorrhage rate was 2.6% but dropped to 0.6% after two years. The postoperative microsurgical hemorrhage rate was 8.8% among patients with residual lesions. Among patients without residual lesions no postoperative hemorrhage occurred. Advancements in the microsurgical technique significantly improved the surgical outcome thus resulting in a total excision rate of over 90% in the modern neurosurgical era.

Conclusions: Microsurgery and GKRS are complimentary treatment options both resulting in a favourable patient outcome if applied on selected patients in an experienced, multidisciplinary neurosurgical centre.