BACKGROUND: Grade 2 meningiomas are aggressive tumors associated with a high recurrence rate, leading to repeated surgical procedures, which can seriously worsen the patients’ neurological status. Although, radiosurgery is an increasingly popular technique, its role in the management of grade 2 meningiomas has yet to be precisely determined.

OBJECTIVE: Our study aims to evaluate radiosurgery in achieving tumor control of proven tumor progression occurring after the surgical resection of grade 2 meningioma. METHODS: This retrospective study included 27 consecutive patients who underwent radiosurgery for the treatment of a proven radiological progression of a previously surgically treated grade 2 meningioma between 2000 and 2012. The mean radiation dose was 15.2 grays (range 12 to 21) and the mean target volume was 5.4 cm³ (range 0.194 to 14.2). There were 9 men and 18 women with a mean age of 59 years. Thirty-four radiosurgical procedures were performed in 27 patients.

RESULTS: The mean progression-free survival after radiosurgery was 32.4 months concerning the target irradiated volume and 26.4 months regarding all intracranial meninges. With a mean follow-up time of 56.4 months (range 12 to 120), the 12-, 24-, and 36-month actuarial local and regional control rates for all patients were 75%, 52%, 40%, and 75%, 48%, 33%, respectively. We reported a single case of transient hemiparesis that completely resolved without sequelae.

CONCLUSION: Radiosurgery appears to be a safe and effective treatment for local control of delayed progression after surgical resection of a grade 2 meningioma. Higher doses, similar to those applied for malignant tumors, should be recommended when possible.