9º Simpósio Médico Internacional de VHL
9th International Medical Symposium on VHL
III Encontro de Famílias com a Síndrome de VHL
3rd VHL Family Meeting

Rio de Janeiro • October 2010

ABSTRACT

Radiosurgery for Cerebellar Hemangioblastomas

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Introduction: Surgery is the main treatment of cerebellar hemangioblastomas and radiosurgery (RS) may have a role as a complementary or alternative approach.

Objective: To assess the role of RS in the management of primary or recurrent cerebellar hemangioblastomas. Methods: Retrospective analysis of 11 consecutive patients with cerebellar hemangioblastomas (22 lesions) treated with RS between 1999 and 2008 with a 6 months minimum follow-up. RS was delivered with Gamma Knife for primary (17 lesions) or recurrent (5 lesions) hemangioblastomas. Seven patients had von Hippel-Lindau disease-associated hemangioblastomas (15 lesions) and 4 had sporadic hemangioblastomas (7 lesions).

Results: The median follow-up was 45 months (11-113 months). The median marginal dose was 15 Gy (13–24 Gy) and median target volume was 0.12 mL (0.01–11.5 mL). Two patients died from disease progression, and one of them due to progression in the central nervous system. The overall survival after RS was 100% at 1 year and 90% at 3 and 6 years. Tumor growth was controlled in 86.4% (19 in 22) of cases. The progression-free survival after RS at 1, 3 and 6 years was 100%, 90% and 60%, respectively.No complication such as radiation-induced peritumoral edema or radiation necrosis occurred.

Conclusions: These early results show that RS provides a high local control rate of cerebellar hemangioblastomas, is associated with a low risk of adverse radiation effects and is an attractive alternative to multiple surgical procedures for patients with von Hippel-Lindau disease.