

Abstract
Stereotactic radiosurgery is being increasingly advocated as the primary modality for treatment of vestibular schwannomas (VS). This modality has been shown to arrest tumor growth, with few associated short-term morbidities, and with possibly better hearing and facial nerve preservation rates than microsurgery. Radiation-induced oncogenesis has long been recognized, although stereotactic radiosurgery de novo induction of a secondary tumor has never been clearly described. The authors report on a patient with a VS who did not have neurofibromatosis Type 2 and who underwent gamma knife surgery (GKS). This patient required microsurgical removal of the VS within 8 months because of development of a tumor cyst with associated brainstem compression and progressive hydrocephalus. The operation resulted in clinical stabilization and freedom from tumor recurrence. Seven and a half years after undergoing GKS, the patient presented with symptoms of raised intracranial pressure. Magnetic resonance imaging demonstrated a new ring-enhancing lesion in the inferior temporal lobe adjacent to the area of radiosurgery, which on craniotomy was confirmed to be a glioblastoma multiforme (GBM). Despite additional conventional external-beam radiation to the temporal lobe, the GBM has progressed. Whereas this first reported case of a GBM within the scatter field of GKS does not conclusively prove a direct causal link, it does fulfill all of Cahan's criteria for radiation-induced neoplasia, and demands increased vigilance for the potential long-term complications of stereotactic radiosurgery, and reporting of any similar cases.

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