

Role of Gamma Knife in the Treatment of Large Metastatic Brain Tumors. A Preliminary Report. Satoshi Suzuki MD, PhD; Takuya Inoue; Ryousuke Tsuchimochi Fukuoka Kieikai Hospital, Fukuoka, Japan Steel Memorial Yawata Hospital, Kitakyushu, Japan

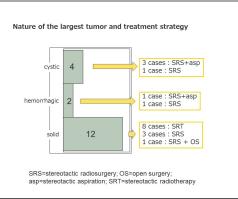


Introduction

Gamma Knife has been widely accepted as a useful tool in treating metastatic brain tumors (METS). Indication for large METS using GK is still a challenging issue.

Methods

GK was used for stereotactic radiosurgery (SRS) or stereotactic radiation therapy (SRT) in treating METS in 295 sessions at Gamma House of Steel Memorial Yawata Hospital between Jan. 2010 and Mar. 2013. Of them, 18 sessions (6.1%) included large tumors with volume 14 mL or larger. We tried to treat large METS using GK in different strategies according to the nature of each tumor. The nature of each tumor was classified into 3 categories; i.e., solid tumors (12 cases), cystic tumors (4 cases), and tumors with intratumoral hemorrhage (2 cases). SRT was used for the treatment of solid tumors with 3 fractionations in every 2 weeks. SRS (GKRS) were done in the treatment of cystic tumors and tumors with intratumoral hematomas.

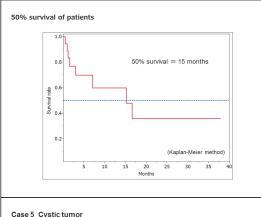


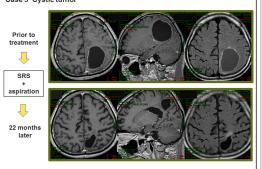
Results

Most of the solid tumors have shrinked and clinical improvement was observed; however, some tumors did not respond well and the clinical improvement was limited. One case needed whole brain radiation therapy and, the other patient received open surgery due to radiation necrosis. GKRS prior to surgical resection was done in one case and succeeded to prevent dissemination of tumor cells into cerebrospinal fluid. All cystic tumors were successfully treated by GKRS followed by stereotactic aspiration. We need to be careful in treating large tumor with intratumoral hemorrhage. Intratumoral hemorrhage does not mean cyst with hemorrhage and these tumors should be treated as solid tumors.

Conclusions

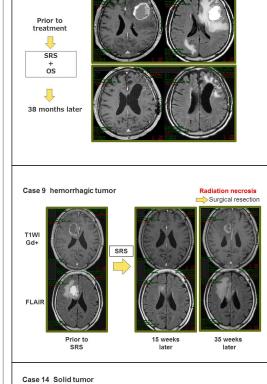
GK is a useful tool in treating large METS. Further accumulation of data is necessary to obtain a conclusive results.





Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of GK in the treatment of Large METS, 2) Discuss, in small groups, treatment strategies for large METS, 3) Identify an effective treatment for large METS.



Case 2 Solid tumo

