

Peri-SRS Administration of Bevacizumab for Large Brain Metastases: A Prospective Case Series Evaluating the Efficacy and Safety

Abel Po-Hao Huang MD; Ya-Fang Chen; Shao-Lun Lu; Chia-Hsien Cheng; Hung-Yi Chen; Fu-Ren Xiao; Feng-Ming Hsu

Introduction

Brain metastases (BM) are the most common brain tumors in adults. It is estimated that around 10-30% of cancer patients would develop brain metastases during the course of their illness. Stereotactic radiosurgery (SRS) is the treatment of choice to achieve intracranial control while sparing neurocognitive function. However, the risk of radiation-induced adverse effects after single-fraction SRS increases with the treated volume of brain metastases. Radiation dose is often compromised to avoid excessive toxicities. We propose a new combined treatment strategy of fractionated stereotactic radiosurgery with concurrent bevacizumab for large brain metastases.

Methods

Patients with the diameter of the largest BM = 2 cm was enrolled for combined therapy. Bevacizumab with 5 to 7.5 mg/kg was given one day before the first fraction of radiosurgery and 2 weeks after the first dose. SRS was given in 1 to 5 fractions depending on tumor size. Radiographic response was assessed by RECIST. Brain metastasis progression-free survival and overall survival were calculated by Kaplan-Meier analysis.

Results

Thirty-four patients were enrolled in this retrospective study. The majority (26/34) were patients with NSCLC. Three patients have prior brain radiation. The median number of BM per patient was 3 (range 1-22). The largest tumor volume ranged from 4.1 to 61 cc (median 7.3 cc) and the median prescribed biological equivalent dose was 51.3 Gy (18.3 Gy single fraction equivalent). All patients tolerated the treatment well. The median overall survival was 14 months. Local control was achieved in 82.3% and completer remission was achieved in 38.2%. Two patients experienced tumor hemorrhage without significant neurological deficit or need for intervention. Only one patient (2.9%) had symptomatic radionecrosis required surgical intervention.

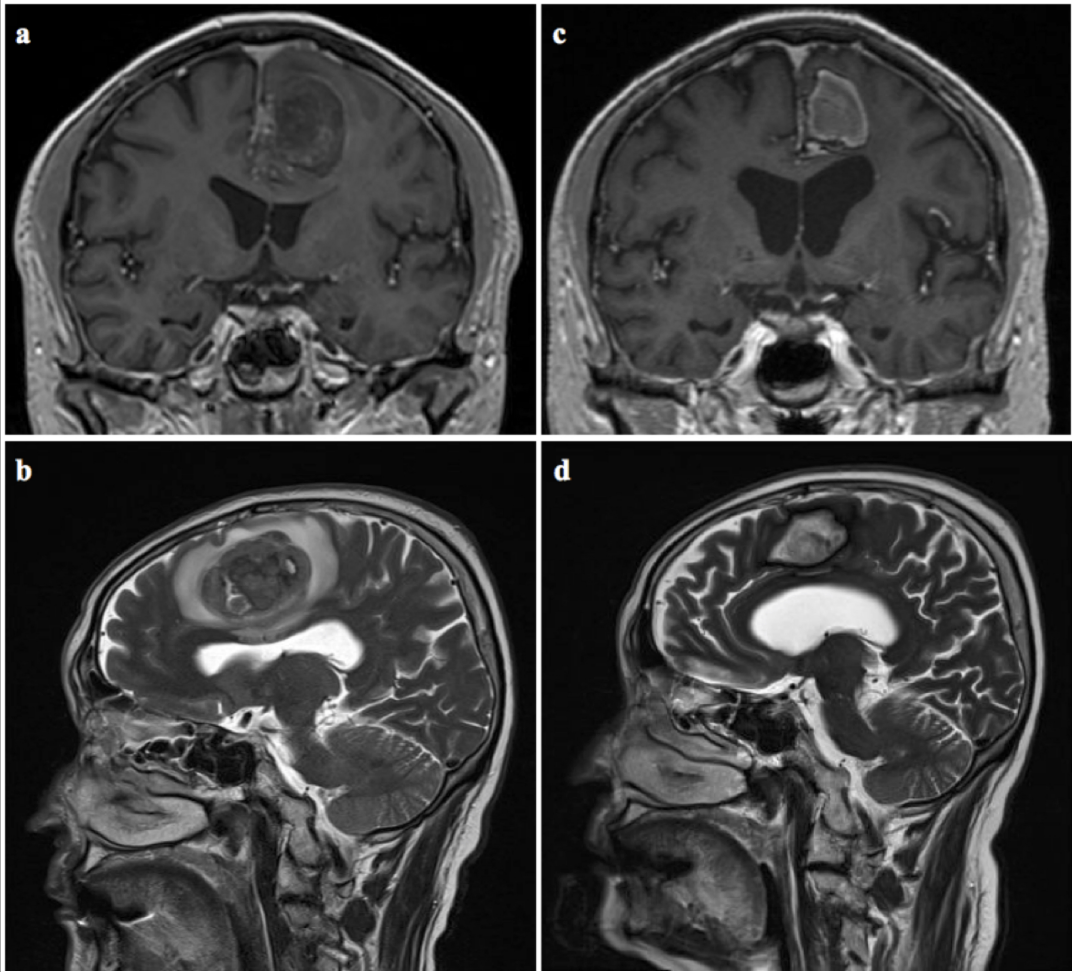
Conclusions

Stereotactic radiosurgery with concurrent Bevacizumab for large brain metastasis is safe and effective with very low risk of treatment related toxicities and good response rate.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of , 2) Discuss, in small groups, about the patient selection for combined radiosurgery with concurrent Bevacizumab 3) Identify an effective

BEV-SRS



References

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