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Stereotactic biopsy combined with stereotactic (125)iodine brachytherapy for diagnosis and treatment of locally recurrent single brain metastases.

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Abstract

This paper reports on stereotactic biopsy combined with stereotactic (125)iodine brachytherapy (SBT) for locally recurrent, previously irradiated cerebral metastases, focusing on feasibility, complications, cerebral disease control, and survival. All patients with suspected locally recurrent metastases detected by MRI were selected for this combined procedure. After stereotactic biopsy, all patients with a verified vital tumor underwent SBT (50 Gy surface dose applied for 42 days) during the same surgical procedure. Histological results of biopsy, complications, treatment response, local and distant disease control, and survival were evaluated. Thirty patients underwent stereotactic biopsy, and 27 were treated with SBT for histologically proved tumor recurrence. There was no treatment-related mortality, and morbidity was transient and low (6.6%). Median survival was 14.8 months. After one year the actuarial incidence of local and distant relapse was 6.7 and 45.5%, respectively. There was no grade 3 or 4 CNS toxicity, even among the 18.5% of patients with tumors >30 mm. For these patients stereotactic biopsy seems to be a safe and valuable means of differentiating between radiation-induced tissue changes and tumor recurrence/progression. SBT is a safe, minimally invasive, and highly effective treatment option for cerebral disease control and survival. Furthermore, it can be performed during the same stereotactic operation.

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