GAMMA KNIFE RADIOSURGERY WITH PET-CT AND MRI CO-REGISTRATION FOR RECURRENT NASOPHARYNGEAL CARCINOMA: A 14-YEAR SINGLE-CENTER RETROSPECTIVE ANALYSIS

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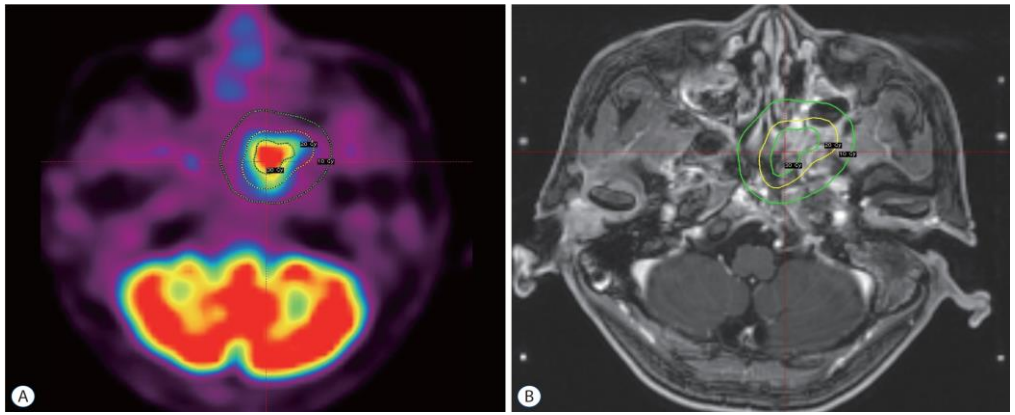
Introduction

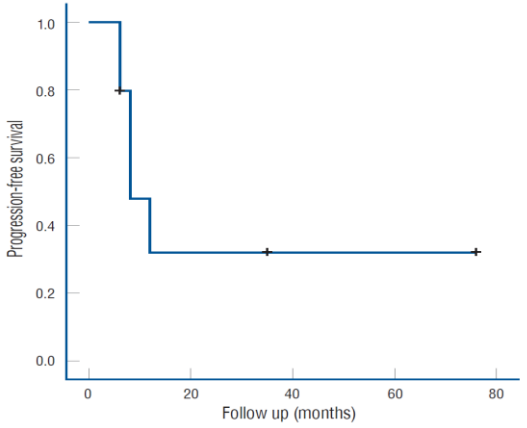
We retrospectively evaluated the efficacy of Gamma Knife radiosurgery (GKS) for recurrent nasopharyngeal carcinoma (NPC) in patients who previously underwent radiotherapy, and analyzed the treatment outcomes over 14 years.

Materials and Methods

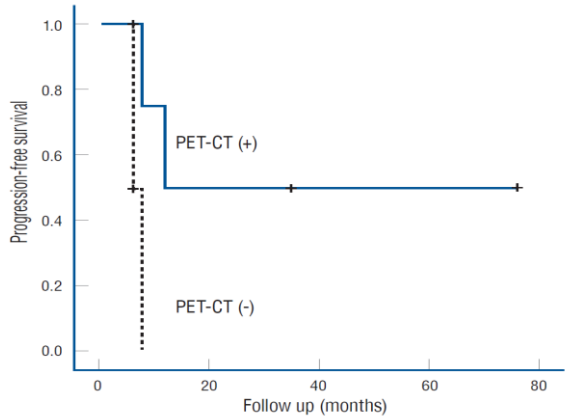


A : Dose planning for recurrent nasopharyngeal carcinoma showing co-registration with PET-CT and MRI. The tumor was treated with a radiation dose of 20 Gy at the 50% isodose line. B : Dose planning for recurrent nasopharyngeal carcinoma showing MRI without co-registration with PET-CT. PET-CT : positron emission tomography-computed tomography, MRI : magnetic resonance imaging.

Result



Kaplan-Meier curve showing local failure-free survival of patients with recurrent nasophar yngeal carcinoma af ter Gamma Knife radiosurgery.



Kaplan–Meier analysis showed that patients with recurrent nasopharyngeal carcinoma who underwent Gamma Knife radiosurgery had significantly better local failure-free survival when PET-CT and MRI co-registration was used (p=0.027).

Conclusion

GKS is an acceptable salvage treatment option for patients with recurrent NPC who previously received radiation therapy. PET-CT and MRI co-registration for dose planning can help achieve local control of recurrent NPC.