Effectiveness of Positron Emission Tomography-Computed Tomography in Evaluation of Superselective Intra-arterial Chemoradiotherapy in Patients with Advanced Maxillary and Upper Gingival Carcinomas

Haruo Hirakawa, Yasuyuki Nishi, Makoto Tada and Taisuke Watanabe

We have been applying superselective intra-arterial chemoradiotherapy (SIACRT) to advanced squamous cell carcinomas of the maxillary sinus and upper gingiva since 2009. We reported the outcomes of SIACRT in this journal recently. SIACRT is a promising therapy to preserve the patient’s quality of life both during and after the treatment, without sacrificing the cure rate. However, we cannot but use imaging to evaluate the SIACRT response, because visual observation of the lesion is difficult with the maxillary sinus not fenestrated in our therapeutic method. We use 18F-FDG-Positron emission tomography-computed tomography (PET/CT) to evaluate the SIACRT response. This report shows the PET/CT findings of the same patients we reported in this journal recently, before and after SIACRT. We also mention squamous cell carcinoma antigen (SCC) of the patients as a guide to the response evaluation. The 1st PET/CT around 3 months after SIACRT showed false positive in many of the cases. Another PET/CT 1–2 months later could evaluate the SIACRT response more correctly. SCC might help for the evaluation using PET/CT.

Keywords: superselective intra-arterial chemoradiotherapy, PET/CT, squamous cell carcinoma antigen, response evaluation

References
Fluctuation before and after the treatment in the maximum standardized uptake value (SUVmax)

The cut-off value was defined as 3.0 in SUVmax after the treatment. Complete response (CR) was defined as 3.0 or below in SUVmax. Seven cases showed CR except case 9.

Fluctuation before and after the treatment in the blood SCC antigen

Only the partial response case (case 9) showed an increase in the blood SCC antigen similarly to SUVmax.