

# High late complication and local control with Hypofractionated radiosurgery boost in advanced head and neck cancer : Is it feasible and safe ?

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## 서론

Local control is an important prognostic factor for long-term disease control in advanced head and neck cancer. Fractionated stereotactic radiotherapy (FSRT) boost may improve local control with increased delivered radiation dose. However, FSRT with large fractional dose needs more experiences and longer follow up to define potential long-term complications. We report on the clinical outcome of Cyberknife radiosurgery (CKS) boost after external RT for locally advanced head and neck cancer with emphasis on unexpected high, late complications.

## 재료 및 방법

Twenty seven patients were treated with

curative external radiation therapy, followed by CKS boost for locally advanced head and neck cancer. CKS boost sites were as follows : 10 nasopharynx, 5 maxillary sinus, 4 nasal cavity, 5 peri-orbit, 3 tongue, and 1 oropharynx. Age range was 10-83 years old (median 55 years old). Nineteen patients (70.4%) received combined chemotherapy sequentially or concomitantly. The administered ERT dose before CKS were 36-70Gy (median 50Gy) to the CTV. GTV of high tumor burden or residual tumor were boosted to the dose of 10-27 Gy with the 70-80% (median: 80%) isodose line in 3-5 fractions. GTV volume ranged from 6.8 ~ 69.4cc (median 27.8 cc). Follow up durations were 12.8~64.6 M (median 40.2 M)

## 결과 및 고찰

All patients showed the major response :

Twenty-two (81.5%) patients achieved complete response, 5 patients (18.5%) achieved partial response at median F-U of 2.25 months after CKS. One year and 2 year relapse free survival rate were 78.8 % and 62.4%, respectively. However, during follow up periods, grade 3  $\geq$  late complications were observed in 9 patients (33.3%) (2 pontine necrosis in NPC, 3 soft tissue necroses, unhealed mucosal ulcer with fatal bleeding in 1 tongue cancer, 1 optic neuropathy and 2 retinopathy in patients with GTV close to eye ball). And also grade 1~2 manageable late complication observed in 9 patients (minimal but prolonged mucosal ulcer over 1 year in one patients, 3 cataracts, 3 nasolacrimal duct stenosis or occlusion, soft tissue and skin fibrosis in one patients, and unhealed wound dehiscence in one patients)

## 결 론

Our results show that CKS can be an effective boost modality to improve the local control of locally advanced head and neck cancer through dose escalation for the high risk area, but late complication rate were unacceptably high. FSRT with large fractional dose should be applied with caution in head and neck sites. It would be needed more accumulated clinical data. Further details of our data and recommendation will be discussed.

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