

## Assessment of treatment-related thyroid dysfunction in patients with head and neck cancer

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### ABSTRACT

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**Objective.** To assess thyroid dysfunction in head and neck cancer patients who have received external beam radiotherapy according to radiotherapy fields and dose, tumor site and other local or systemic treatments retrospectively and prospectively and propose a follow-up schedule.

**Material and methods.** A total of 378 patients was classified into two groups. Group I (n = 345) consisted of surgically treated 153 laryngeal, 80 nasopharyngeal and 112 oral cavity/oropharyngeal carcinoma patients; these patients were evaluated retrospectively for treatment-related thyroid dysfunction using their data files. Group II included 33 patients with head and neck cancer who were evaluated prospectively. Thyroid function tests were performed at the beginning of the radiotherapy and every three months after the radiotherapy course, and thyroid dysfunction regarding surgery, radiotherapy and chemotherapy was evaluated.

**Results.** In Group I, the median follow-up for 153 operated laryngeal carcinoma patients was 44 months. Four (2.6%) of them were found to have clinically apparent hypothyroidism. After a median follow-up of 36 months, none of the 80 nasopharyngeal carcinoma patients showed signs of hypothyroidism. Clinically apparent hypothyroidism was detected in only 1 (0.8%) of the oral cavity/oropharyngeal carcinoma patients after a median follow-up of 25 months. In Group II, 1 (3%) patient was found to have thyroid dysfunction postoperatively prior to radiotherapy. At the time of analysis, 29 (87.8%) patients were euthyroidic, 2 (6.1%) patients had subclinical and 2 (6.1%) patients had clinical hypothyroidism. All patients with thyroid dysfunction have had combined surgery and radiotherapy, and none of the patients treated with radical radiotherapy has experienced hypothyroidism.

**Conclusions.** Even after a short follow-up, the incidence of thyroid dysfunction was 12.2% in head and neck cancer patients treated with combined surgery and radiotherapy. We recommend thyroid function tests in these patients prior to and once every 3-6 months after the radiotherapy course.

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**Key words:** head and neck cancer, hypothyroidism, radiotherapy.

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