IMAGE-BASED STUDY ON THE DISTRIBUTIONS OF THE METASTATIC CERVICAL LYMPH NODES IN PATIENTS WITH NASOPHARYNGEAL CARCINOMA: KAOHSIUNG MEDICAL UNIVERSITY HOSPITAL EXPERIENCE

Chih-Ming Liu¹, Shi-Long Lian¹,², Chih-Jen Huang¹,², Ming-Yii Huang¹,², Jen-Yange Tang¹,³, Le-Ping Tsuei¹, Yu-Hui Ho¹

¹Department of Radiation Oncology, Kaohsiung Medical University Hospital
²Department of Radiation Oncology, Faculty of Medicine, College of Medicine, Kaohsiung Medical University
³Tian-Sheng Memorial Hospital

**Purpose**: The purpose of this study was to evaluate the image-based distributions of cervical nodal metastases of patients with nasopharyngeal carcinoma (NPC) and to define a clinical target volume (CTV) extent according to different stage of NPC.

**Materials and Methods**: We collected 131 patients with NPC who received radiotherapy at the Radiation Oncology Department of KMUH from January, 2004 to February, 2006. Seventeen patients were excluded due to no proper image data and 114 patients were enrolled in our study. These patients had a pretreatment evaluation by contrast enhanced computed tomography (CT) or magnetic resonance imaging (MRI) from base of skull to clavicle. The nodal distributions were assessed by diagnostic radiologists and radiation oncologist according to the image-based classification.

**Results**: Eighty-two patients (71.9%) had cervical lymphadenopathy (LAP) and thirty-two patients (28.1%) had no lymph node metastasis at the initial presentation. A total of 36.8% of patients had bilateral neck nodal metastases. In the patients with LAP, 51.2% of patients had bilateral neck lymph node involvement. The distributions of clinical metastatic lymph nodes per level in patients with cervical lymph node metastases were as follows: level IA: 0%; level IB: 15.9%; level IIA: 50.0%; level IIB: 89.0%; level III: 31.7%; level IV: 8.5%; level VA: 30.5%; and level VB: 7.3%.

**Conclusion**: In Taiwan, patients with NPC have a high probability of cervical nodal metastases especially in level IIA, IIB, III, and VA. In this study, the metastatic rates of lower neck lymph nodes (level IV and VB) were relatively low. When we design the treatment plan of radiotherapy for NPC, we may consider reducing the field size of lower neck and even omitting the supraclavicular fossa (SCF) irradiation in patients with early stage of NPC. Further clinical prospective studies also need to improve the treatment strategy of NPC.


Key words: Nasopharyngeal carcinoma, Radiotherapy, Lymphadenopathy