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An Unusual Metastasis of Posterior Neck and Axillary Lymph Nodes from Nasopharyngeal Carcinoma

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비인강암의 후경부 및 액와 림프절 전이

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= Abstract =

비인강암은 비인강상피에 발생한 암으로 경부전이 및 간, 폐, 뼈 등의 원격전이가 흔히 나타난다. 본 증례에서는 제 4기 병기를 가진 비인강암환자에서 항암 화학요법 및 방사선 치료 후 매우 드물게 후경부 및 액와 림프절 전이를 보인 환자를 보고하는 바이다. 진행된 병기를 보이는 비인강암 환자는 방사선 치료 후 피부전이가 종종 나타나는 현상이나 후경부 림프절 전이는 흔치 않다. 특히 액와 림프절 전이는 비인강암에서 거의 전이를 보이지 않으나 본 증례에서는 매우 드물게 액와 림프절 전이를 보여 보고하는 바이다.

중심 단어 : 비인강암 · 후경부림프절 · 액와림프절

Introduction

Nasopharyngeal carcinoma (NPC) is a malignant tumor of nasopharyngeal epithelium. The highest incidence of NPC is in xanthoderm, followed by that in melanoderm. The lowest incidence of NPC is in caucasian.[1] The incidence of NPC in southern china is 50 times higher than that in the USA.[2] The etiology of NPC is thought to be multifactorial, including genetic, viral, dietary, and enviromental influences. Many histological classifications of this tumor have been proposed. There are two main types of NPC: (1) squamous cell carcinoma (SCC), and (2) undifferentiated carcinoma (UC). The latter is characterized by a typical pathognomonic histological pattern. Clinically, UC has high metastasizing behavior.[3] Distant metastases are mainly observed in bone (48%), lung (27%), liver (11%), and nodes above the clavicle (10%). Although NPC is very radiosensitive and chemoresponsive, nearly 7%-13% of cases have persistent residual disease after treatment.[4]

Most cutaneous metastatic lesions of head and neck cancer are usually found on the anterior region, including the head and neck, chest, and abdomen. These cutaneous metastases are associated with very poor prognosis. In addition, recognition of the primary nature versus metastatic nature of the tumor is occasionally a problem. The flow of the lymphatic system through the axilla is normally from the distal portions of the upper limb and chest wall along the axillary vein toward the subclavian venous system. It has been suggested that complex and variable connections may

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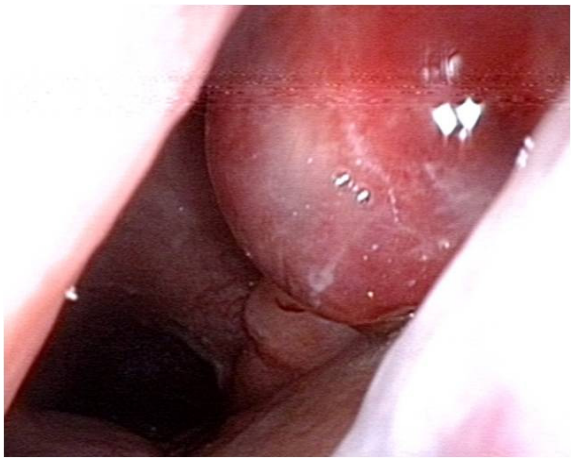

Fig. 1. Nasopharyngoscopy showing a mass in the left nasopharynx. Histopathological examination confirmed an undifferentiated carcinoma of the nasopharynx .

exist between the cervical lymphatics and the axillary lymphatics. Axillary metastases have been found in 2% to 9% of patients with head and neck cancers at autopsy.[5)]

Previous reports have suggested that axillary metastasis can come from altered lymphatic anatomy caused by previous treatment to the neck, seeding new and aberrant lymphatic channels to the axilla as subsequent recurrence or second primary metastasis.[6)] The aim of the present article is to report a case of nasopharyngeal carcinoma metastasis in the posterior region of the neck and axillary lymph node and discuss its presentation, management, and outcome.

Case presentation

A 45-year-old male was admitted to our ENT Department with a seven-month history of bilateral palpable cervical mass. On clinical examination, he had a diffuse swelling mass on submandibular area and multiple hard fixed cervical nodes involved at levels IV and V of the left-sided neck. A fixed mass on the right submandibular area was

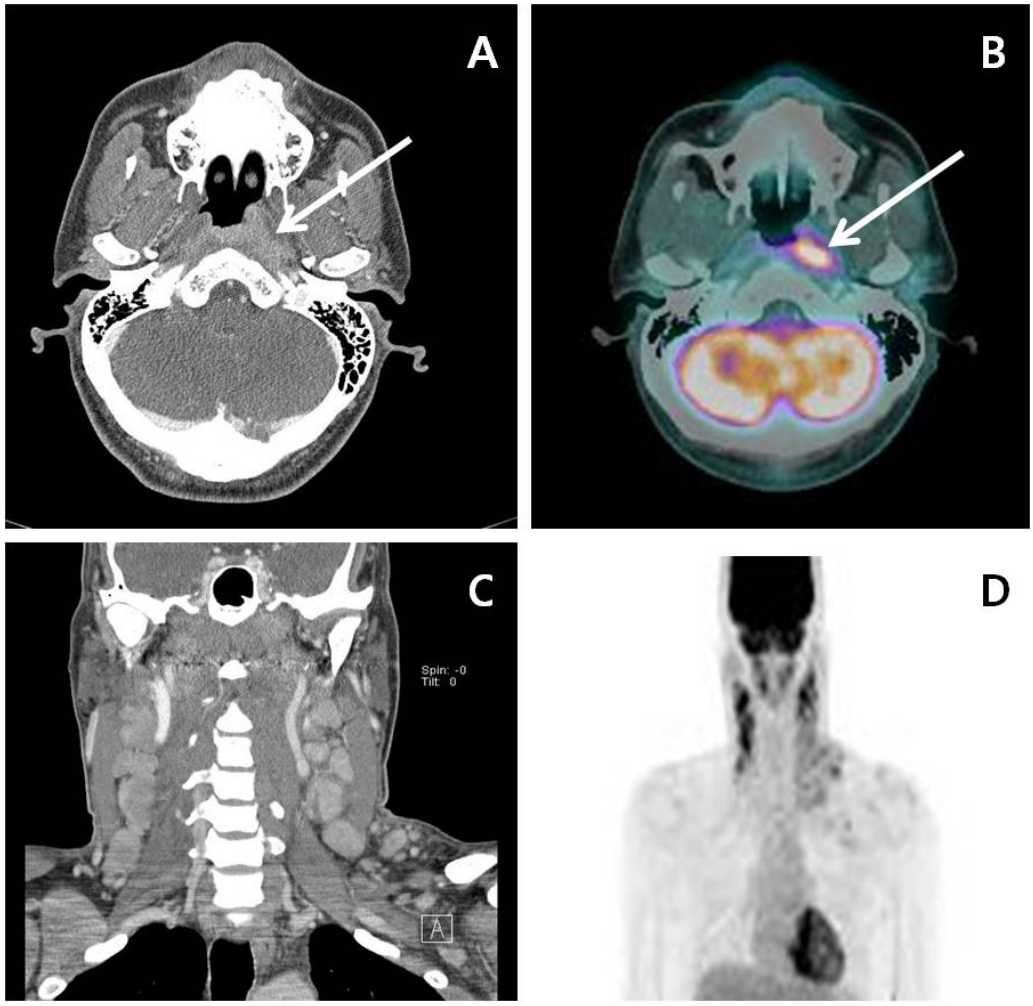

Fig. 2. Neck computed tomography and Positron emission tomography-computed tomography (PET-CT) before treatment. A-B: Left nasopharyngeal mass infiltration to the parapharyngeal space (standardized uptake value [SUV] max of 7.36); C-D: Both lymph nodes at level II, III, IV, V, and the left supraclavicular area. The largest was measured at 3 cm in diameter .

noted. On nasopharyngoscopy, Pinkish protruding mass in the left nasopharynx was identified and a punch was biopsied. Histopathological examination confirmed an undifferentiated carcinoma of WHO type III nasopharynx. Computer tomography (CT) and magnetic resonance imaging (MRI) revealed crossing of the tumor to the midline with infiltration to the parapharyngeal space (T2) and both retropharyngeal lymph nodes measured at 3.7 cm in diameter. In addition, it was infiltrated to both lymph nodes of level II, III, IV, V, and of the left supraclavicular area measured at 3 cm in diameter (N3b). A left axillary lymph node measured at 2.3 cm in diameter was also found. To search for distant metastasis, PET-CT scans were performed. No specific finding of abdomen or pelvis was identified. A bone and joint scan showed negative results. According to the American Joint Committee on Cancer Staging [6], the patient was diagnosed with stage IVB nasopharyngeal carcinoma. Therefore, the patient was offered a course of induction chemotherapy and definitive concurrent chemoradiation therapy(CCRT).CT evaluation was done two month after the end of CCRT and showed partial response of metastatic neck lymph nodes. He underwent radical right-sided neck dissection and modified radical left-sided neck dissection. Histological finding revealed metastasis undifferentiated carcinoma 18/30 lymph nodes on right-sided neck and 43/72 lymph nodes on left-sided neck as well as fibroadipose tissue with cancer invasion. The patient underwent three cycles of weekly adjuvant chemotherapy. Compared to previous PET-CT scans, there was a decreased metabolism of residual metastasis lymph nodes in the retropharyngeal, cervical, posterior neck, supraclavicular, and the left axillary area. After three months,

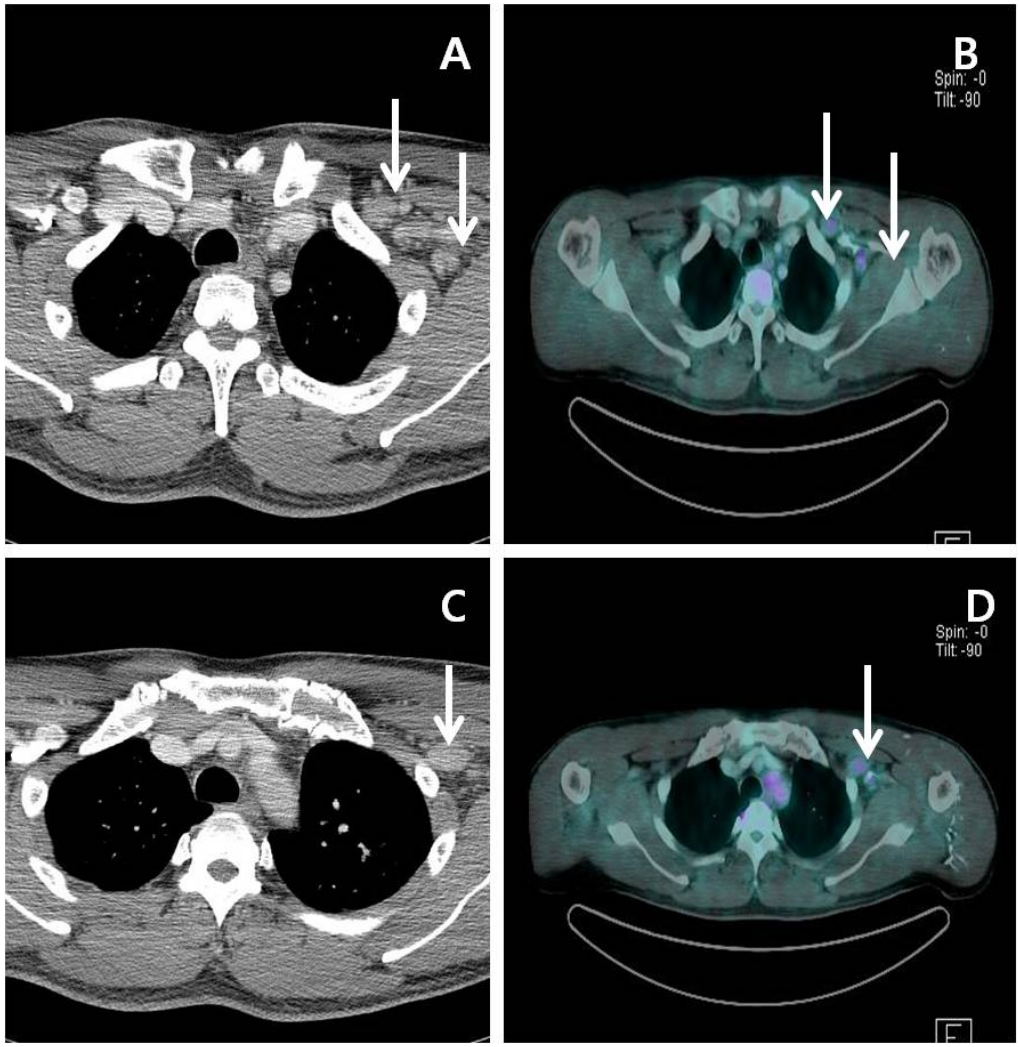

Fig. 3. Axillary lymph node metastasis in Neck CT and PET–CT after chemotherapy, RT and, surgery. Multiple lymph nodes on left axillary area. The largest was measured at 2.3 cm in diameter with FDG uptake.

an increase in the size of the left supraclavicular area and posterior neck lymph nodes with enhanced lymphatic channel was identified. These posterior neck lymph nodes extended to overlying skin. The patient was strongly recommended to have a posterior neck dissection with reconstruction and a removal of axillary lymph node. However, the patient refused to have any more operation. Currently, he has three cycles of weekly adjuvant chemotherapy.

Dicussion

NPC has a high propensity of cervical node metastasis. Lymphatic drainage of the nasopharynx is predominantly connected to the cervical lymph nodes through superficial and deep systems.[7] The two most commonly involved cervical lymph node regions at staging include lateral retropharyngeal nodes (69.4%) and level II nodes (70.4%). The overall probabilities of levels III, VA, and IV nodal involvements are 44.9%, 26.7%, and 11.2%, respectively. The rates of involvements of cervical lymph node group at supraclavicular, level IA, IB, and level VI are 8.8%, 0%, 2.7%, and 2%, respectively. Skip nodal metastasis has a very low risk at 0.5%.[8] Bilateral cervical lymph node metastases usually occur in the early phase of disease development.

The flow of the lymphatic system through the axilla is normally from the distal portions of the upper limb and chest wall along the axillary vein toward the subclavian venous system. It has been suggested that complex and variable connections may exist between the cervical lymphatics and the axillary lymphatics. For a previously untreated neck, the occurrence of axillary metastases is more difficult to explain. Firstly, cancer cells might have traveled distally down the lymphatic system from the thoracic duct to the axillary lymphatics. Secondly, the fat in level V is continuous with axillary fat. Cancer cells might have spread via this pathway. Our patient did present with positive nodes at level V, supporting such possible way of spreading. Furthermore, the patient had been treated with concurrent chemoradiotherapy and radical neck dissection. Therefore, we hypothesize that these treatments might have induced alterations to normal drainage patterns. The manifestation of posterior neck lymph nodes extending to overlying skin might have resulted from previous radiotherapy treatment.

NPC is a very radiosensitive tumor. Radiation therapy (RT) alone can produce high cure rates for NPC at early stages (stage I and II). However, for those with locoregionally advanced stage III and IV NPC, local and distant failure might occur. NPC is also sensitive to chemotherapy. [1] Early use of an induction-concurrent sequence at full dose to be theoretically more effective for eradicating micrometastases has been proposed as a strategy to improve the efficacy of chemotherapy.[2] Some recent studies of chemotherapy combined with RT have revealed that these therapies could improve loco-regional and systemic control.[3] After CCRT treatment, stage N2-3 NPC might also require further treatments with adjuvant chemotherapy (AC).[9] Advanced local disease and nodal metastases are more likely to relapse after CCRT using current protocols. Therefore, adjuvant therapy with full doses of systemic chemotherapy after definitive CCRT has been studied with an attempt to control micrometastatic disease, thus reducing the risk of relapse. Our patient had a partial response after using a cycle of induction chemotherapy followed CCRT. Therefore, bilateral neck dissection was performed. After that, he was offered three cycles of weekly adjuvant chemotherapy. However, an increase in size of the left supraclavicular area and the posterior neck lymph node with enhanced lymphatic channel persisted. A residual NPC is defined as the confirmation of disease occuring within 6 months after treatment. It is associated with spontaneous regression of late-responding tumors. Our patient has multiple cervical lymph nodes on the left-sided posterior neck extended to overlying skin, which might have infiltrated the surrounding tissue. Therefore, the skin should be removed en bloc with radical neck dissection specimen. Because the neck has been irradiated, the thin neck skin preserved after removing the tumor might not be viable. Therefore, it might be better to replace the overlying skin that was close to the tumor. Reconstruction of the cutaneous defect could be satisfactorily achieved with either a deltopectoral flap or a pectoralis major myocutaneous flap. However, survival after treatment for NPC depends on the stage of the disease, chemotherapy regimen, irradiation technique, doses delivered, and the socio-economic conditions.[2]

Conclusion

Here, we report a case of nasopharyngeal carcinoma. The patient underwent induction - concurrent sequence, radical neck dissection, and 3 cycles of adjuvant weekly chemotherapy. However, the patient had persistent disease in the posterior neck nodes and the axillary area. Tumor invasion patterns in the metastatic neck nodes in other head and neck cancers should be evaluated separately.

Key Words : Nasopharyngeal cancer · Axillary lymph node · Unusual lymph node metastasis

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