

## Laryngeal Squamous Cell Carcinoma with Knee and Heel Skin Metastases: A Case Report

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**SUMMARY** Distant metastases from laryngeal carcinoma are frequently seen in the lung, bone and liver, while skin metastases are rarely observed. In these cases presented as case reports in the literature, the supradiaphragmatic region is usually involved. Skin metastasis in lower extremity has only been reported in a few cases. While being an indicator of poor prognosis, skin metastasis is also considered as a messenger of distant organ metastasis. Survival is very short after development of skin metastasis. In our case, nodular skin metastasis was found both in the superior-lateral margin of the left patella and in the right heel. This is the first case reported in the literature on laryngeal carcinoma metastasizing to these localizations.

**KEY WORDS:** laryngeal carcinoma, skin, knee, heel

### INTRODUCTION

Considering all malignancies, the proportion of newly diagnosed larynx carcinoma cases is 0.78% with a mortality rate of 0.65% (1). Larynx carcinoma accounts for 40%-50% of head and neck carcinomas, with squamous cell carcinoma histology seen in nearly all of these cases. Skin metastases are generally reported as single or multiple painless subcutaneous nodules. However, cases of vesicular (2) or inflammatory (3) lesions have also been described.

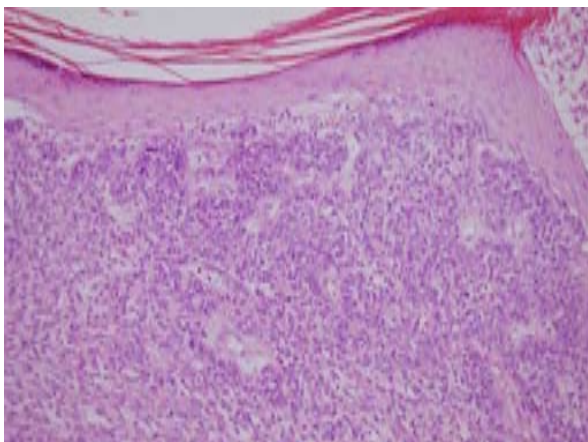
### CASE REPORT

A 76-year-old male patient was admitted to our hospital due to hoarseness. He had a history of partial laryngectomy due to squamous cell laryngeal carcinoma three years before. Total laryngectomy and bilateral neck dissection were performed and the patient received no postoperative treatment. The diagnosis was recurrent squamous cell laryngeal carcinoma. Adjuvant radiotherapy (in total dosage of 50 Gy) was administered to the patient diagnosed with moderately



**Figure 1.** Metastasis of laryngeal carcinoma to the right heel after excisional biopsy.

differentiated squamous cell carcinoma T4aN0M0 (stage IVA) and he was followed up. Metastatic lesions of maximum size of 1 cm were found in his lung one year later. The patient was followed up. He remained asymptomatic for eighteen months, then he was re-admitted to our hospital for dyspnea and a mass in his right heel. Computed tomography revealed progression of thorax involvement. The subcutaneous lesion measuring 4x3 cm was excised *in toto* (Fig. 1). Histopathology report indicated differentiated squamous cell carcinoma. Intact epidermis was maintained in pathological specimen. Atypical epithelium cells forming clusters were found in the dermis and subcutaneous tissue and these findings were compatible with metastatic squamous cell carcinoma (Fig. 2). A 4x2 cm palpable mass was also found in the left knee. Magnetic resonance imaging revealed a 4x2 cm mass with thick and regular contours next to the superior-lateral margin of the left patella in subcutaneous fat tissue (Fig. 3). Fine-needle



**Figure 2.** Metastasis of laryngeal carcinoma to the skin of the right heel. The epidermis is intact; metastasis from squamous cell carcinoma to the dermis is present (hematoxylin and eosin, X100).

aspiration biopsy taken from this site contained malignant epithelial cells (Fig. 4). The patient died due to disease progression after two cycles of docetaxel-cisplatin chemotherapy.

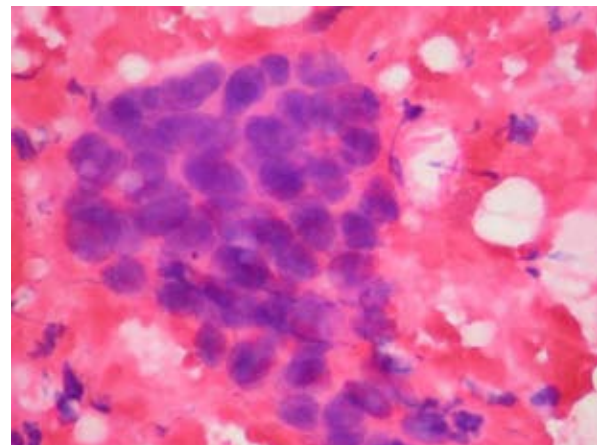
## DISCUSSION

Laryngeal carcinoma metastasis to the skin is seen very rarely. Besides skin metastases from squamous cell carcinoma of the larynx, skin me-



**Figure 3.** Metastasis of laryngeal carcinoma to the left thigh visualized on magnetic resonance imaging.

tastases from neuroendocrine cancer have also been reported in the literature (4). Skin metastases from laryngeal carcinoma are mainly reported in the supradiaphragmatic region. Metastases



**Figure 4.** Fine-needle aspiration cytology: atypical epithelium cells compatible with large cytoplasm with evident nuclei or huge hyperchromatic nuclei in erythrocyte covered base (hematoxylin and eosin, X200).

to the neck (5), supra-infrascapular region (3), chest wall (4), spine (4), scalp (5,6), nose (6), shoulder (2), hand (7), arm (8) and forehead (8) are the most frequently reported skin metastases. Infradiaphragmatic location has only been reported in a few cases, involving abdominal skin (6,9) and penis (10). In our case, lesions were found in infradiaphragmatic location and were seen in the heel and knee regions, which have not yet been described in the literature.

Several theories are suggested to explain the physiology of skin metastasis from laryngeal carcinoma. One of these implies deterioration of lymphatic drainage and residual tumor cells in the skin after surgery or radiotherapy administered for the treatment of primary tumor (5,6). Another theory is hematogenous expansion due to the by-pass of pulmonary circulation. This enables metastasis of tumor cells *via* azygos vein and Batson's plexus through vertebral venous system without being blocked by pulmonary circulation and filtration (11). Retrograde communication between thoracic-abdominal lymphatics is another theory (6).

Similar to other head and neck tumors, prognosis is very poor for skin metastasis from laryngeal carcinoma. Survival is quite short in cases of skin metastasis. Studies show the average period of survival to be about six months from detection of skin metastasis in patients with head and neck tumors (12). Skin metastasis can also be the first manifestation of the disease (2,6,7,9). In our patient, survival was seven months after development of skin metastasis and rapid progression of lung metastases.

Treatment options for skin metastases from laryngeal carcinoma include surgery, radiotherapy, chemotherapy, and their combinations. However, no effective treatment option to prolong survival has yet been found. Surgery was demonstrated to contribute significantly to the patient quality of life and survival; however, additional studies are needed (13).

## CONCLUSION

Therefore, treatment of skin metastases should be conducted individually according to the performance status of the patient, comorbid diseases, treatment required, etc.

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