A Case of Skin Metastasis from Mucoepidermoid Carcinoma of Parotid Gland Mimicking Radiodermatitis

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Cutaneous metastasis from parotid gland carcinoma is very rare and there have been no reports in Korean literatures. Furthermore, it can often manifest as inflammatory type of skin metastasis and mimic a radiodermatitis.

We report a case of a 31-year-old Korean man with cutaneous metastasis originated from parotid gland mucoepidermoid carcoinoma which mimicked clinically a radiodermatitis.

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Key Words : Cutaneous metastasis, Parotid gland carcinoma, Radiodermatitis

Although statistical reports were variable, the incidence of cutaneous metastasis has been reported to range between 0.5% and 9.0%[1-5]. Certain types of carcinomas are more frequently associated than others with skin metastasis, but the incidence of tumors metastatic to the skin usually correlates with the frequency of the primary internal carcinoma[1,5]. In the past large-scaled studies by Brownstein & Helwig[6], women with skin metastasis had the following distribution of primary malignancies: breast, large intestine, lung, ovary, uterine cervix and men had the primary origins from lung, large intestine, squamous cell carcinoma of the oral cavity, kidney, stomach in decreasing order. In both sexes, cutaneous metastasis from parotid gland carcinoma is so rare, there are less than 10 cases in English literatures.

We report a case of a 31-year-old Korean man with cutaneous metastasis from mucoepidermoid carcoinoma of the parotid gland.

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CASE REPORT

A 31-year-old Korean man was referred to the dermatology department with erythematous skin lesions on the left side of his neck for 2 months.

He was diagnosed by mucoepidermoid carcinoma of parotid gland and total parotidectomy with radical neck dissection was done 1 year ago. Thirty-three of 49 regional lymph nodes extracted from a radical neck dissection were found to have metastatic tumor at the time of initial resection. At that time, the tumor was composed of large islands of atypical squamous epithelium and mucin production was apparent in focal areas (Fig. 1A). The tumor cells have abundant cytoplasm and vesicular nuclei with prominent nucleoli (Fig. 1B). The tumor was regarded as a high-grade mucoepidermoid carcinoma. A magnetic resonance imaging of the neck and parotid area showed multiple lymph nodes enlargement and intraglandular lymphadenopathy of left parotid gland ($1 \times 1 \times 0.8$cm). Other radiologic studies including chest roentgenogram, abdominal ultra sonogram, bone scan revealed no pathologic findings. The patient was classified as stage T1N2bM0. He received postoperative radiotherapy on the left parotid areas and

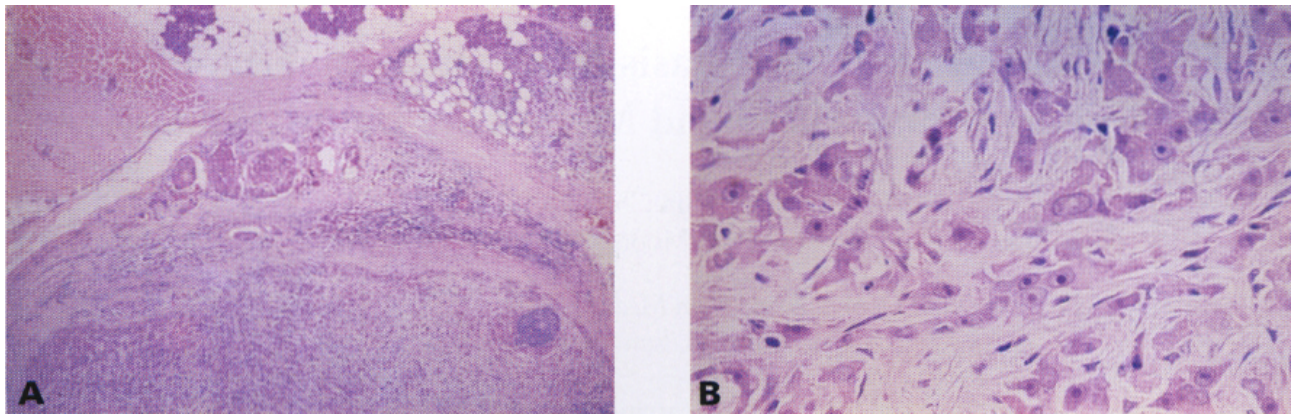

Fig. 1. A) The tumor was composed of large islands of atypical squamous epithelium and mucin productin was apparent in focal areas(H&E, ×100). B) The tumor cells have abundant cytoplasm and vesicular nuclei with prominent nucleoli(H&E, ×400).

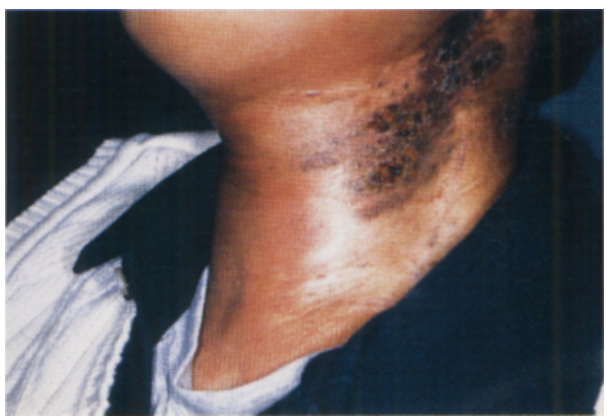

Fig. 2. Skin examination showed well demarcated red, some crusting sclerodermoid taut plaque on the left side of the neck.

neck for 2 months.

Approximately 5 months after the completion of radiotherapy, the patient noted a firm, some ulcerated and crusted, erythematous patches on the irradiated site of the left neck area (fig. 2). At first, the lesion was considered to be chronic radiation dermatitis, but a biopsy specimen showed scattered dermal lobules of mucin-producing epithelial islands admixed with areas of squamoid cells although both components were poorly differentiated (Fig 3A). The tumor cells in lymphatic spaces were also detected in the dermis (Fig. 3B). Groups of cells with pale to deep eosinophilic staining of the cytoplasm, known as oncocytic differentiation, were also presented. The mucicarmine stains

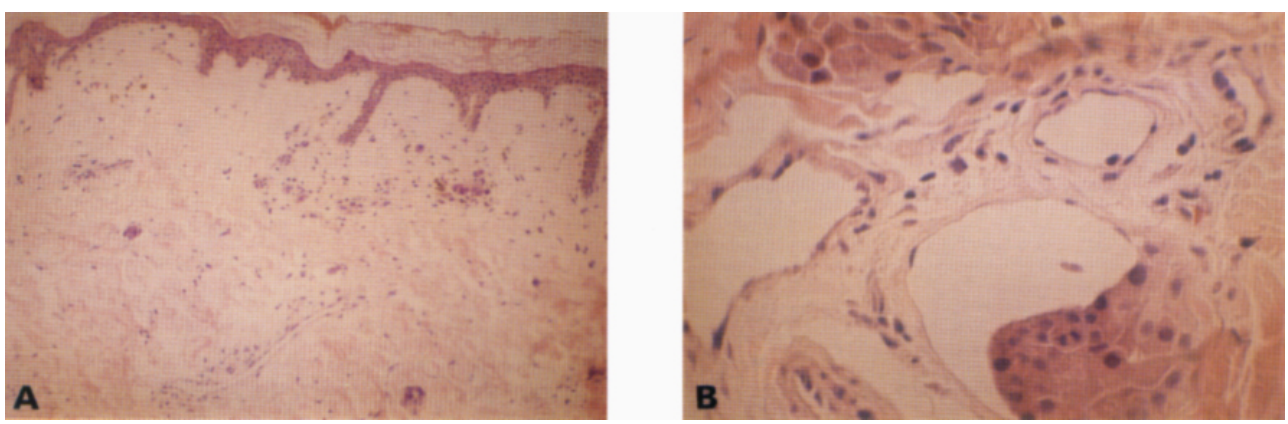

Fig. 3. A) There were scattered dermal lobules of mucin-producing epithelial islands (H&E, ×100). B) The tumor cells in lymphatic spaces were also detected (H&E, ×400).

showed the large granular or clear cells to contain abundant carminophilic materials in the dermis. These findings were helpful to diagnosis of cutaneous metastasis from mucoepidermoid carcinoma of parotid gland. Clinically, the type of cutaneous metastasis were inflammatory ones. Although he received repeated radiotherapies, he had a rapid downhill course and no clinical response was observed.

DISCUSSION

Malignancies of the parotid gland are uncommon and even rarer are the cutaneous metastasis from them[7]. The most common types of malignant parotid gland tumor were mucoepidermoid, adenocystic, adenocarcinoma and malignant mixed carcinoma in descending order. The mucoepidermoid carcinoma is rare in other locations but can arise less commonly in the esophagus, lacrimal passages, bronchus, pancreas, prostate, thymus, thyroid and skin[8].

Histopathologically, the tumor was composed of large islands of atypical squamous epithelium and mucin production was apparent in focal areas and the tumor cells has abundant cytoplasm and vesicular nuclei. The mucoepidermoid carcinomas are classified into two or three grades, based on the ratio of mucin-secreting, squamous, intermediate, and clear cells. The lower-grade subset refers to well-circumscribed masses of well-differentiated squamous cells and mucin-producing cells. High grade tumors contain solid, infiltrative mass with more squamous, intermediate, and clear cells than mucin-producing cells[8]. Generally, in a group of tumors that might be classified as high grade, there is a higher incidence of local recurrence and metastasis. In our case, because the tumor was composed of large islands of atypical squamous cells and mucin production was apparent only in the focal areas, the tumor was regarded as a high-grade mucoepidermoid carcinoma.

The rate of distant metastasis from mucoepidermoid carcinoma of parotid gland is relatively low, estimated at less than 10-15%. The most common sites of distant metastasis are lung, brain, and bone. Metastasis, when it occurs, is most often via lymphatic channels[9]. While direct extension into the surrounding skin by mucoepidermoid carcinoma is an occasional finding, distant metastasis to the skin appears to be quite unusual[9]. Until now, just one case of skin metastasis from mucoepidermoid carcinoma of parotid gland by direct extension was reported by Angela et al.[8] in 1997. In our case, although the site of cutaneous lesion was near by primary parotid gland mucoepidermoid carcinoma, it seems not to be a direct extension because the skin lesion was widespread and the biopsy specimen showed tumor cells in lymphatic spaces.

There are two clinical types of cutaneous metastasis from the parotid gland adenocarcinoma[7]. One is described as telangiectatic metastasis[10], and the other as inflammatory metastasis[11]. In the former, blood vessels are dilated with red blood cells and contain aggregates of neoplastic cells, and the latter condition resulted from lymphatic cutaneous spread of primary parotid gland tumors, producing so-called inflammatory metastatic carcinoma or carcinoma erysipelatoides[12-14]. The clinical appearance of inflammatory metastatic carcinoma is usually that of a diffuse erythematous patch or plaque, resembling erysipelas. Our case presented the intradermal lymphatic location of the tumor cells in histopathology, and diffuse erythematous patch clinically, indicates the inflammatory metastasis to the skin from mucoepidermoid carcinoma of parotid gland. But initially, the patient was considered to be chronic radiation dermatitis in clinical appearance because he presented with poorly demarcated firm erythematous patches in the areas of irradiation.

Herein, we describe a case of cutaneous metastasis from mucoepidermoid carcinoma of parotid gland, which was presented with diffuse erythematous patch, resembling radiation dermatitis, on the site of irradiation. Dermatologists should be aware of the potential for cutaneous metastasis of the lesions mimicking radiation dermatitis, which occurred in a patient who was treated with irradiation for primary malignancies.

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