

## Zosteriform Cutaneous Metastasis of Lung Adenocarcinoma

Yasuo Kubota\*, Koza Nakai, Asuka Munehiro, Junko Moriue and Koza Yoneda

Department of Dermatology, Faculty of Medicine, Kagawa University, Japan

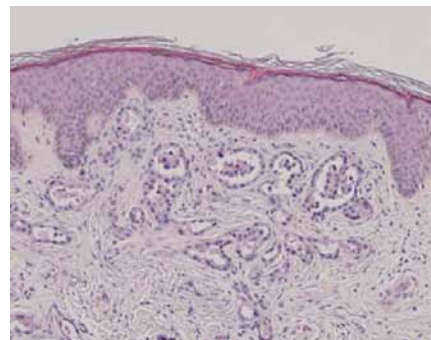
### Case Report

We present a case of metastatic adenocarcinoma of the lung mimicking a herpes zoster-like eruption and distribution. Although rare, there were 19 published cases of cutaneous metastatic adenocarcinoma arising as a zosteriform eruption [1-5].

In August 2011, a 57-year-old Japanese man presented with a 3 months history of multiple reddish serous papules arranged in a dermatomal distribution on the right hemithorax and arm. These papules were slightly painful. Four years earlier, in September 2007, he was diagnosed with an adenocarcinoma of the left upper lung without lymph node metastasis (pT1N0M0) and underwent radical lobectomy with mediastinal lymphadenectomy. In March 2008, a right rib bone metastasis was detected by FDG-PET and CT. He was treated with 4 cycles of multidrug-chemotherapy (CBDCA+PAC, GEM+VNR). One year later brain metastasis was found that was treated with gamma knife radiosurgery. Two months later, other brain, bone and right axillar lymph nodes metastasis were found and treated with many different kinds of chemotherapy (CBDCA+DOC+Bevacizumab, CDDP+PMX+Bevacizumab, CBDCA+PAC+Bevacizumab) and radiosurgery. During her course of multiple chemotherapies, he developed painful, burning reddish papules on the right chest and arm in May 2011. Physical examination revealed 5- to 8-mm serous papules on an erythematous base in segmental zosteriform distribution along C5-T1 neurotomes over the right upper chest without crossing the median line and on the outer surface of the corresponding arm (Figure 1a and 1b). There was a visible peau d'orange appearance of the right arm and axilla with pitting edema. The clinical appearance was consistent with the morphology of herpes zoster (HZ). Biopsy results from the left arm revealed that circular islands of atypical glandular epithelial cells infiltrating only the superficial dermis (Figure 2).

Immunohistochemistry showed positive staining to thyroid transcription factor-1 and napsin A and this pattern was identical to previous biopsies of the lung. No tumor cells present as emboli in the lymphatic and vascular vessel lumens with immunohistochemical staining (D2-40, CD31, respectively). Neuron specific enolase positive cutaneous nerves were not found in conjunction with tumor cells. He was treated with 11 cycles of chemotherapy (CBDCA+PAC+Bevacizumab). Skin lesions were remained and slightly erosive in January 2012.

This is an atypical eruption of cutaneous metastatic adenocarcinoma of the lung, which resembled HZ clinically. Prior published cases



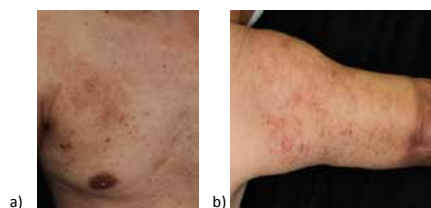
**Figure 2:** Biopsied skin showing irregular islands of atypical glandular epithelial cells below the epidermal-dermal junction (HE; original magnification x 40).

as well as ours involved a specific dermatome or adjacent unilateral dermatomes.

Metastasis to skin generally shows histological resemblance to those of the primary tumor and is centered in the dermis although there is sometimes extension to the subcutis [3]. The epidermis is usually intact. Our case is different from other previous reported cases because circular islands of atypical glandular epithelial cells infiltrating only the superficial dermis looks like subepidermal bulla histologically. This pathologic finding could give the clinical appearance of serous papules.

The mechanism by which cancer cells spread in zosteriform skin metastasis remains unknown but proposed theories include lymphatic or haematogenous spread, neural spread, surgical implantation of tumor cells, and koebnerization [1].

Although we could not found any tumor cells in the vascular, lymphatic vessels and in the cutaneous nerves, we postulated that malignant cells might spread to the skin through lymphatic system. The pressure of right axillar lymphadenopathy and lymphedema could explain this phenomenon. Furthermore their ability of glandular formation with epidermotropism might be possible explanation for clinical appearance of serous papules. This case is a reminder that cancer assumes many morphologies. Physicians should be aware



**Figure 1:** Zosteriform distribution of metastases on the right chest (a) and arm (b).

**\*Corresponding author:** Yasuo Kubota, Department of Dermatology, Faculty of Medicine, Kagawa University, 1750-1, Ikenobe, Miki-cho, Kita-gun, Kagawa, Japan, Tel: +81-87-891-2162; Fax: +81-87-891-2163; E-mail: [kubotay@kms.ac.jp](mailto:kubotay@kms.ac.jp)

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that if patients seem to suffer from HZ having a positive history for a malignancy, histological examination is essential to rule out cutaneous metastasis.

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