Acta Oncologica, 2015; 54: 1225–1241

informa
healthcare

LETTERS TO THE EDITOR

Florid cutaneous manifestations with acanthosis nigricans in a lung cancer patient

XIANFU MENG, FANG XIE, WENJUAN WANG, WEI BA & CHENGXIN LI

Department of Dermatology, Chinese People's Liberation Army General Hospital, Beijing, China

To the Editor,

Acanthosis nigricans is a rare dermatological disease characterized by skin hyperpigmentation and wart-shaped or velvet-like plaques that are typically in skin folds [1]. Very few cases of lung cancer with acanthosis nigricans have been reported [2]. We herein report one case of lung cancer with metastasis to the mediastinum and malignant acanthosis nigricans. A 46-year-old female patient was admitted on March 4, 2014 because of a two-month history of progressive generalized darkening of the skin. She developed sudden erythematous skin eruptions one month ago and the eruptions were not itchy. She was given a diagnosis of drug eruptions and prescribed with medicines, which werew not effective. Thereafter, the skin became progressively darkened and generalized dark brown skin patches appeared, especially in the neck and skin folds. The patient had exertional chest distress with cough but denied sputum production, hemoptysis and fever. There was no history of hematemesis or melena. The patient had no significant past history including tuberculosis, hepatitis and malaria, and was a non-smoker. Chest computed tomography (CT) on 17 February 2014 revealed occupying lesions in the left lung and abdominal CT showed enlargement of multiple retroperitoneal lymph nodes. Aspiration biopsy of right cervical lymph node three days later revealed moderately differentiated adenocarcinoma.

Laboratory studies on admission showed carcinoembryonic antigen (CEA) at 132.0 μg/l (normal, 0–5.0 μg/l), CA19-9 at 61.2 kU/l (normal, 0.1–35), CYFRA21-1 at 5.2 (normal, 0.1–4.0 ng/ml) alpha-fetoprotein (AFP) at 1.9 (normal, 0–20 μg/l), CA125 at 72.3 (normal, 0.1–35 u/ml), CA15-3 at 189.6 (normal, 0.1–30 u/ml), CA724 at 2.8 (normal, 0.1–10 u/ml), and NSE at 13.4 (normal, 0–24 ng/ml). CT scan on March 4, 2014 showed occupying lesion in the posterior basal segment of the left lung (Figure 1A). Bone ECT revealed radial enhancement of the left hip (Figure 1B) and cerebral MRI examination demonstrated abnormally high intensity in the left frontal lobe (Figure 1C). Anterior posterior chest radiograph showed occupying lesion in the lower left lung and the presence of multiple foci in both lungs (Figure 1D). A diagnosis of peripheral lung cancer with multiple metastases was entertained.

Dermatological examination revealed diffuse hyperpigmentation with thickening of the skin of the face, neck, flexures, and external genitalia (Figure 2A). Numerous enhanced ridges and velvety hyperkeratosis were seen. Skin lesions were associated with moderate itching. No lymph node was palpable and the abdomen was flat and soft, but with mild tenderness. No other remarkable findings were noticed. A skin biopsy, performed on the axillary surface, demonstrated mild hyperatosis in the epidermis, dermal papillomatosis, mild hypertrophy of stigmatodermia between dermal papilla, and the presence of chromatocytes (Figure 2B and C).

The patient was started with intravenous pemetrexed 0.8 g and cisplatin 130 mg once daily on 6 March 2014, which was repeated after 21 days. After three cycles of treatment, CT showed that the occupying lesion in the lungs shrank by approximately 50%. Skin hyperpigmentation was obviously lessened and ridges and velvety hyperkeratosis disappeared. The skin became smooth and itching was relieved. CEA (128.4 μg/l), CA19-9 (44.8 kU/l), CA724 (1.5 u/ml), CYFRA21-1 (10.3 ng/ml), and AFP (1.3) were lower while CA125 (118.6 u/ml), CA15-3 (252.6), and NSE at 33.1 were

Correspondence: C. Li, Department of Dermatology, Chinese People's Liberation Army General Hospital, 28 Fuxing Road, Hai Dian District, Beijing 100853, China. Tel: + 86 15210866656. Fax: +86 10 66939315. E-mail: chengxinderm@163.com

(Received 13 November 2014; accepted 4 December 2014)

ISSN 0284-186X print/ISSN 1651-226X online
DOI: 10.3109/0284186X.2014.998274

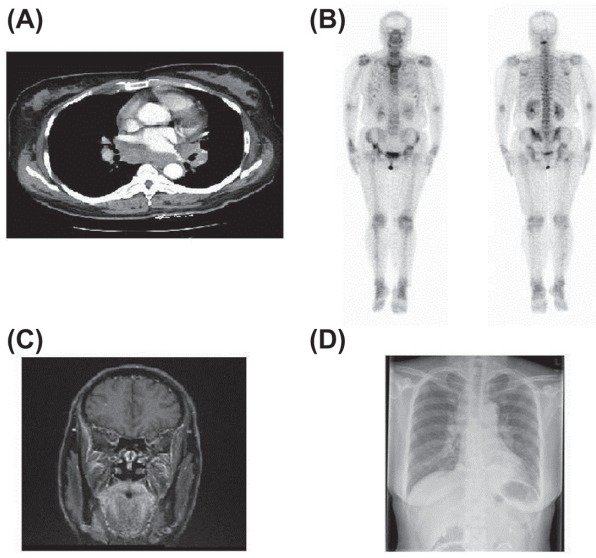

Figure 1. (A) CT scan shows occupying lesion in the posterior basal segment of the left lung. (B) Bone ECT reveals radial enhancement of the left hip. (C) Cerebral MRI demonstrates abnormally high intensity in the left frontal lobe. (D) Anterior posterior chest radiograph shows occupying lesion in the lower left lung and the presence of multiple foci in both lungs.

higher compared with the admission data. Hematological analysis showed that white blood cell count was 16.71×109/l, red blood cell count was 3.82×1012/l, hemoglobin was 104 g/l, and platelet was 279×109/l. Serum biochemistry showed that aspartic transaminase was 9.2 U/l, alanine transaminase was 8.1 U/l, blood urea nitrogen was 2.88 mmol/l, urea was 44.3 μmol/l, and blood glucose was 5.28 mmol/l. The patient is still alive at the time of our writing this report.

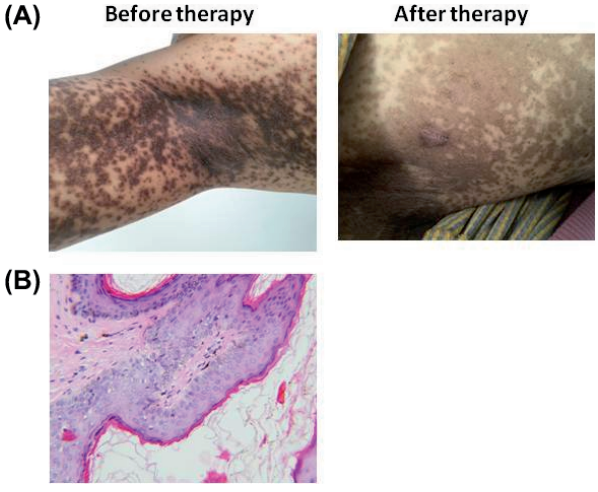

Figure 2. (A) Cutaneous manifestations in the patient. Photographs were taken during the first cycle of chemotherapy (left panel) and after three cycles of chemotherapy (right panel). Permission for use of the photos was obtained from the patient. (B) Pathological examination of the skin lesions revealed finger-like projections of dermal papilla, mild hypertrophy of stigmatodermia between dermal papilla, and chromatocytes.

Skin lesions may be present in patients with paraneoplastic syndrome. The neoplasm may be found prior to, simultaneously with or after the appearance of the skin lesion. In the current case, skin lesions were found simultaneously with the neoplasm. The patient showed diffuse hyperpigmentation with thickening of skin folds, typical features of acanthosis nigricans. Malignant acanthosis nigricans is more often seen in patients with adenocarcinoma in the digestive tract [3]. Early serological examinations in these patients together with radiologic or endoscopic examinations based on serum tumor biomarkers could be beneficial for early discovery and early treatment and improved prognosis for the patients. Malignant acanthosis nigricans is rarely reported in lung cancer patients. Yoshino et al. reported a patient with acanthosis nigricans who was subsequently found to have mediastinal lymph node metastasis of lung cancer [2]. In the current case, we found evidence of lung cancer with mediastinal and retroperitoneal lymph node metastasis by CT scan and lymph node biopsy. The etiology of acanthosis nigricans in lung cancer patients has not been elucidated and we also do not know the cause of acanthosis nigricans in our lung cancer patient [4]. The prognosis of cancer patients with malignant acanthosis nigricans is rather poor and early metastasis is often seen in such patients [5]. The skin lesions in our patient became lessoned or disappeared following three cycles of chemotherapy, suggesting a link between the development of malignant acanthosis nigricans and lung cancer. The patient is still alive at the time of our writing this report and will continue to be closely monitored by appropriate diagnostic examinations.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

The study was supported by National Natural Science Foundation of China (Number: 81272984)

References

[1] Kapoor S. Diagnosis and treatment of acanthosis nigricans. SKINmed 2010;8:161–4.

[2] Yoshino N, Yamagishi S, Kubokura H, Mikami I, Hirata T, Koizumi K, et al. Mediastinal lymph node metastasis of lung cancer with an unknown primary lesion having concurrent endocrine abnormality and acanthosis nigricans: Report of a case. Ann Thorac Cardiovasc Surg 2009;15:397–400.

[3] Fabroni C, Gimma A, Cardinali C, Lo Scocco G. Tripe palms associated with malignant acanthosis nigricans in a patient with gastric adenocarcinoma: A case report and review of the literature. Dermatol Online J 2012;18:15.

[4] Talsania N, Harwood CA, Piras D, Cerio R. Paraneoplastic acanthosis nigricans: The importance of exhaustive and repeated malignancy screening. Dermatol Online J 2010;16:8.

[5] Xu S, Zhang J. The skin black for 2 years, blood-streaked phlegm exists for 2 months. Chin J Clin 2007;35:72.