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CLINICAL CASE REPORT

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Case Report: Bazex Syndrome Associated With Pulmonary Adenocarcinoma

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Abstract: Bazex syndrome, a rare paraneoplastic syndrome characterized by psoriasiform eruptions, palmoplantar keratosis, and symmetric onychodystrophy, is most prevalent with squamous cell carcinomas of the upper aerodigestive tract.

Here, we reported an uncommon case of Bazex syndrome about an 83-year-old man with pulmonary adenocarcinoma and osseous metastasis, Physical examination found psoriasiform eruptions on the nose, cheeks, ears, knees, and the dorsa of interphalangeal joints, along with plantar keratosis and symmetric onychodystrophy involving hands and feet. Imaging analyses pulmonary adenocarcinoma with both local metastatic nodules and osseous metastasis.

Symptomatic treatment with topical corticosteroids and oral retinoids showed no improvement. A 4-month follow-up showed that Gefitinib, an epidermal growth factor receptor tyrosine kinase inhibitor, successfully reduced primary tumor size and alleviated cutaneous lesions.

Our report here highlighted a potential correlation between pulmonary adenocarcinoma and Bazex syndrome, which is characterized by hallmark nail destruction and preferential involvement of body extremities. Moreover, etiological therapy against underlying malignancy is essential for treating paraneoplastic Bazex syndrome.

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INTRODUCTION

Skin, the outermost body layer, is capable of displaying the earliest clinical manifestations of certain systemic diseases. According to statistics, cutaneous lesions are the first and sole diagnostic clues to around 1% of internal malignancies.[1] First reported by Bazex et al in 1965,[2] Bazex syndrome, also known as acrokeratosis paraneoplastica, refers to a rare paraneoplastic syndrome, which is characterized by psoriasiform eruptions, nail dystrophy, and palmoplantar keratoderma. The cutaneous lesions usually involve the ears, nose, fingers, and to a lesser extent, the elbows and knees. The most frequent associated neoplasm is squamous cell carcinoma of the upper aerodigestive tract.[3] Isolated case reports demonstrated that the neoplasms of liver and the reproductive system could also lead to this paraneoplastic syndrome.[3] Here, we reported an uncommon case of Bazex syndrome about an 83-year-old man with pulmonary adenocarcinoma and correlated osseous metastasis.

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CONSENT

The patient signed informed consent for the publication of this case report and any associated images. And this study was approved by the ethics committee of Changhai Hospital.

Case Report

An 83-year-old man came to our outpatient clinic presented with slightly pruritic cutaneous lesions involving face, hands, and feet for 5 years. On physical examination, infiltrative erythematous plaques with scales were observed on the nose, cheeks, ears, and the dorsa of interphalangeal joints (Figure 1A, B); confluent erythema covered with yellow thick crust were seen on the knees (Figure 1C); all the fingernails were yellow-brown and thickened, with subungual keratotic debris (Figure 1D); both plantar pedis were discolored and hyperkeratotic (Figure 1E).

The patient recalled a body-weight loss of 5 kg during the previous 2 years. He had a 20-year smoking history with an average of 10 cigarettes per day. His family has no hereditary diseases.

Laboratory analyses revealed that serum levels of creatine kinase, creatine kinase-MB, and lactate dehydrogenase were all within normal ranges. Erythrocyte sedimentation rate (55 mm/hour) and tumor marker CA125 (105.5 U/mL) were significantly upregulated. The computed tomography (CT) scan detected a pulmonary adenocarcinoma and a number of local metastatic nodules on the right lower lobe, along with mediastinal swollen lymph nodes (Figure 2A). The positron emission tomography-CT further discovered diffuse bone metastases. The patient refused to undergo needle aspiration biopsy guided by CT.

Direct microscopy and culture showed no signs of fungal infection in his fingernails or toenails. We performed a biopsy of cutaneous lesion over the left knee, which exhibited pronounced epidermal hyperkeratosis and parakeratosis, mild irregular acanthosis, mononuclear cell infiltration around blood vessels within the upper dermis, and roughly normal subcutaneous tissue (Figure 2B).

Based on his characteristic acral dermatitis and nail damage along with pulmonary adenocarcinoma, we diagnosed him as Bazex syndrome. He was given topical dexamethasone ointment twice a day and oral acitretin 10 mg twice a day. Since the cutaneous lesions had no significant improvement after 10 days, we discontinued this combined therapy. Subsequently, the patient started to receive Gefitinib tablet 250 mg once a day, which is a potent anticancer drug with reported efficacy in treating lung adenocarcinoma. After 4 months of medical treatment, the patient is still alive. Repetitive imaging examination demonstrated that the size of his pulmonary considerably reduced, but his bone metastases remained

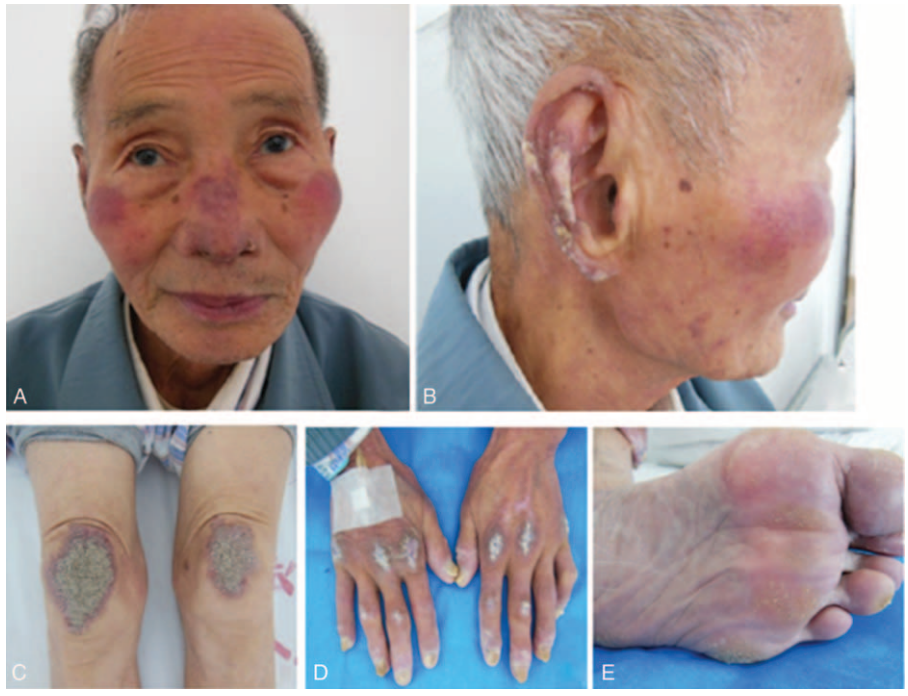

FIGURE 1. (A) Dark red, infiltrative, desquamative plaques on the nose and cheeks; (B) Dark red, infiltrative plaques with scales on the right auricle; (C) confluent erythema covered with yellow thick crust on the knees; (D) infiltrative erythematous plaques with scales on the dorsa of interphalangeal joints; all the fingernails were yellow-brown and thickened, with subungual keratotic debris; and (E) both plantar pedis were discolored and hyperkeratotic.

unchanged. Notably, his cutaneous lesions alleviated significantly (Figure 3A, B).

DISCUSSION

Bazex syndrome is a rare paraneoplastic disease, which is most prevalent with squamous cell carcinomas of the upper digestive tract and cervical metastasis of an unknown origin.[4] Cases accompanying pulmonary adenocarcinoma as our patient reported here are very rare.

The typical clinical feature of Bazex syndrome is psoriasiform eruptions that favors acral such as the fingers (61%), toes (39%), ears (79%), and nose (63%), with tenderness but no pruritus in most cases.[4] This disorder typically progresses in 3 stages: cutaneous lesions on the ears, fingers, and nails; palmoplantar keratosis; the involvement of the knees, elbows, and torso. Remarkably, the underlying malignancy tends to display its symptoms during the stage of palmoplantar keratosis.[5]

The histological findings of Bazex syndrome are unspecific, as in this patient. Particular features in the epidermis include hyperkeratosis, parakeratosis, and irregular acanthosis to a lesser extent. Sometimes, interface changes like vacuolar degeneration can be detected. Dermal alternations include dilating vessels and perivascular inflammatory infiltration. Subcutaneous tissue was generally normal.

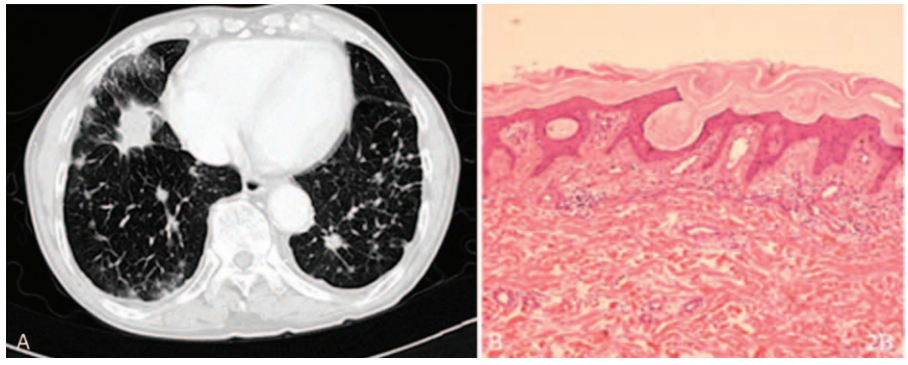

FIGURE 2. (A) Computed tomography of the chest showed pulmonary adenocarcinoma on the right lower lobe with multiple local metastatic nodules; the mediastinal lymph nodes were swollen; (B) the histological examination of cutaneous lesions on the left knee (HE ×200) exhibited pronounced epidermal hyperkeratosis and parakeratosis, mild irregular acanthosis, mononuclear cell infiltration around blood vessels within the upper dermis, and roughly normal subcutaneous tissue.

FIGURE 3. (A, B) After treatment with Gefitinib, the facial lesions alleviated significantly.

The underlying mechanism of this paraneoplastic syndrome remains elusive. Abreu Velez and Howard[6] proposed a crossed reaction between specific types of tumor and cutaneous antigens. The growth factors released by highly proliferative cancer cells and neoplasm-associated zinc deficiency might also contribute to the occurrence of this cutaneous paraneoplastic disorder.[5]

The cutaneous eruptions of Bazex syndrome are typically refractory to local therapy, including coal tar, salicylic acid, vitamin D analogues, corticosteroids, and ultraviolet radiation.[7] Conversely, the treatment of the underlying neoplasm often significantly improves the cutaneous symptoms. Notably, the reappearance of those lesions may indicate the recurrence of the tumor or tumor metastases.[8] In the most reported cases, the emergence of cutaneous lesions precede the symptoms of an underlying neoplasm by several months. Therefore, it is important to recognize these paraneoplastic skin features to achieve early diagnosis of malignancies.

CONCLUSIONS

Our report here highlighted a potential correlation between pulmonary adenocarcinoma and Bazex syndrome, which is characterized by hallmark nail destruction and preferential involvement of body extremities. Recognition of these hallmark signs may allow a timely diagnosis of the underlying malignancy. Moreover, etiological therapy against underlying malignancy is essential for treating paraneoplastic Bazex syndrome.

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