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Case Report

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Acrokeratosis Paraneoplastica with Hepatoid Adenocarcinoma of the Lung : a Rare Case Report

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Abstract

Background: *acrokeratosis paraneoplastica, also known as Bazex syndrome, is a rare acral psoriasiform dermatosis closely associated with squamous cell carcinoma, especially in the upper respiratory and gastrointestinal tracts.*

Case Presentation: *in this case, we will discuss the case of a patient presenting with chronic palmoplantar keratoderma with psoriasiform appearance revealing a hepatoid adenocarcinoma of the lung.*

Conclusions: *only a few cases of Bazex's paraneoplastic acrokeratosis have been published, and they are frequently associated with squamous cell carcinoma of the upper aerodigestive tract. The association with this histological variety, hepatoid adenocarcinoma, has never been reported.*

Keywords: Acrokeratosis Paraneoplastica, Bazex, Lung, Hépatoid Adenocarcinoma

Abbreviations

APB : Acrokeratosis Paraneoplastica
HAL : Hepatoid Adenocarcinoma of the Lung
18F-FDG :18-fluorodeoxyglucose
ADC : hepatoid adenocarcinoma

1. Introduction

Acrokeratosis paraneoplastica (APB) is an uncommon dermatological disorder classified as an obligatory paraneoplastic dermatosis. First described by Bazex in 1965 as the "paraneoplastic syndrome with hyperkeratosis of the extremities," it was observed in a patient with pyriform sinus cancer and cervical metastases, with cutaneous lesions regressing following tumor treatment [1]. Since then, all documented cases of Bazex syndrome in the literature have been associated with an underlying neoplasm. The most commonly linked neoplasms include squamous cell carcinoma of the upper aerodigestive tract and other tumors presenting with cervical or mediastinal lymph node metastases. Additionally, various other associated neoplasms have been reported, including gastric adenocarcinoma, colon adenocarcinoma, small cell lung carcinoma, lung adenocarcinoma, hematological malignancies, cutaneous squamous cell carcinoma, urogenital tumors, as well as squamous cell carcinoma of the thymus and vulva, adenocarcinoma of the uterus, and neoplasms with lymph node involvement [2]. While the exact pathogenesis of APB remains unclear, proposed mechanisms include immune cross-reactivity between tumor antigens and skin components, the release of growth factors by the tumor, and the presence of circulating antibodies against tumor antigens. Here, we present the case of a patient diagnosed with hepatoid adenocarcinoma of the lung after evaluation for lesions consistent with acrokeratosis paraneoplastica.

2. Case Presentation

A 64-year-old chronic smoker and tobacco sniffer, presented with thick, pruritic lesions on the palms and soles for the past 8 months. He was treated with topical medications, resulting in partial improvement, but the lesions recurred upon cessation, accompanied by weight loss, anorexia, and fatigue. This cutaneous symptomatology was preceded by a productive cough without hemoptysis two years earlier. Clinical examination revealed a cachectic patient with focal fissured palmoplantar keratoderma (Figure 1) and evident xerosis, without clinical signs of a tumoral syndrome.

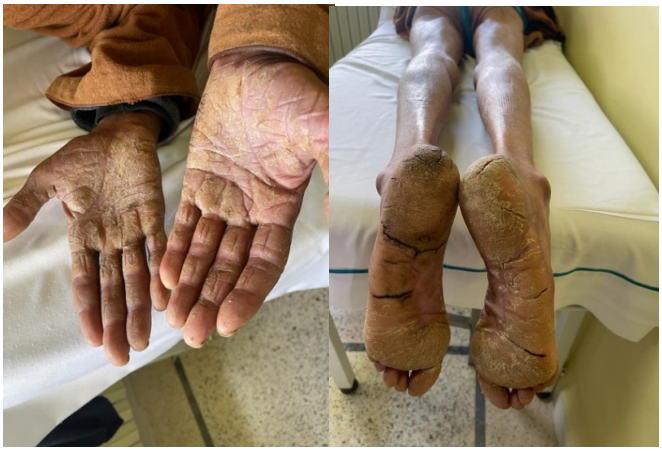

Figure 1: Clinical mage Showing Palmoplantar Keratoderma with Fissures

The differential diagnoses considered included Bazex paraneoplastic acrokeratosis, mycosis fungoides, palmoplantar psoriasis, or chronic contact dermatitis. The skin biopsy revealed cutaneous tissue lined by an epidermis with intercellular edema separating the keratinocytes, along with focal formation of intraepidermal vesicles containing dyskeratotic material. Surface parakeratosis is observed. The dermis contains an inflammatory infiltrate predominantly composed of lymphocytes. (Figure 2).

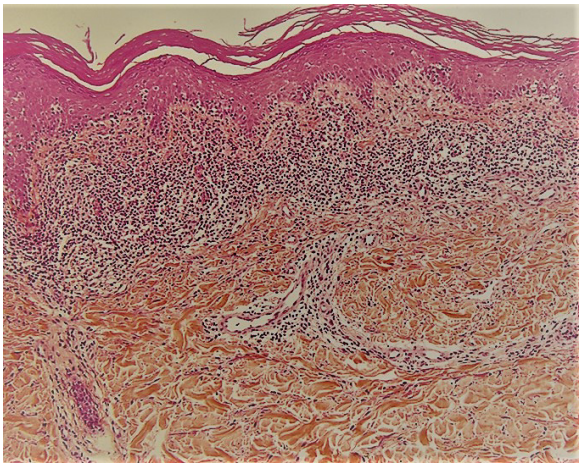

Figure 2: Histological Aspect of the Skin Showing a Spongiotic and Dyskeratotic Dermatitis (HES*40)

A chest X-ray revealed a right paracardiac opacity with blurred spiral boundaries and mediastinal widening (Figure 3), prompting referral to the pulmonology department.

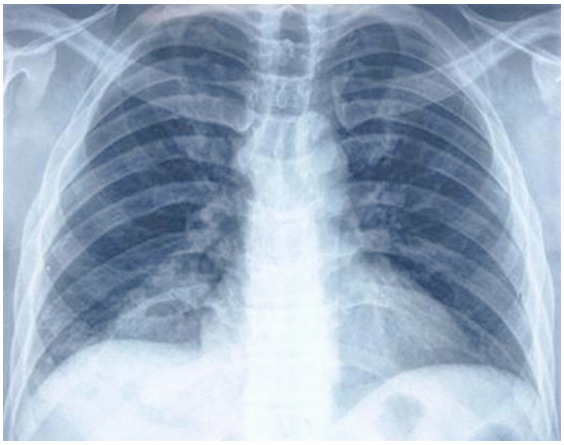

Figure 3: Chest Radiographic Appearance Showing a Right Paracardiac Opacity with Blurred Spiral Borders and Mediastinal Widening

A thoracic computer tomography scan showed an irregularly contoured, enhancing intraparenchymal mass in the lower right lobe measuring 5*2cm, with multiple suspicious bilateral parenchymal and subpleural micromodules. Subsequently, bronchoscopy with biopsy revealed hepatoid adenocarcinoma on histological and immunohistochemical analysis. A positron emission tomography (PET) scan with 18-fluorodeoxyglucose (18F-FDG) for staging demonstrated multiple distant secondary lesions, predominantly in the bones and lungs (Figure 4), leading to referral to the oncology department for further management.

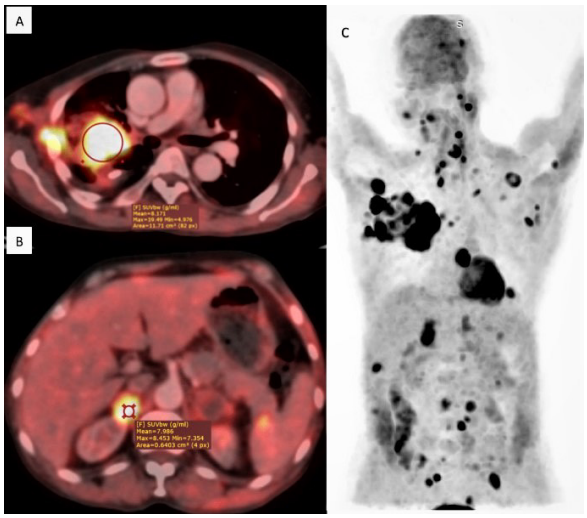

Figure 4: PET-CT Aspect Showing Lung Adenocarcinoma and Extensive Metastatic Involvement

A. Hypermetabolic right upper lobe lung mass (SUVmax 19.49)
B. Focal hepatic uptake suggesting liver metastasis (SUVmax 8.45)
C. MIP image showing widespread nodal and visceral metastatic disease.

Dermatologically, the patient was treated with 10% salicylic acid vaseline and potent topical corticosteroids, resulting in moderate improvement of his keratoderma (Figure 5).

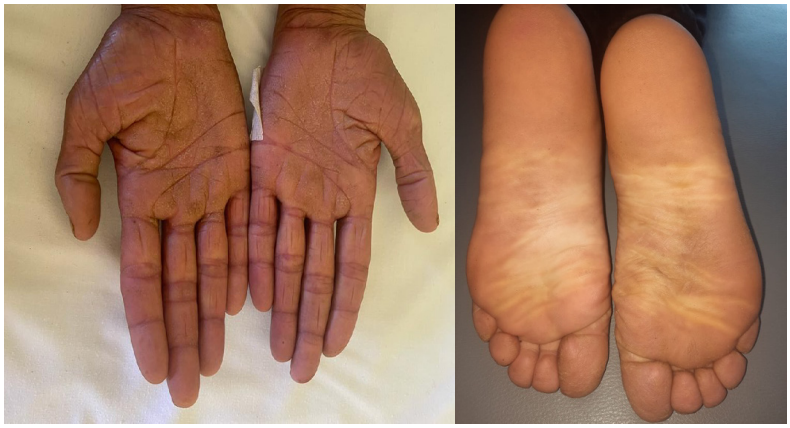

Figure 5: Follow-up Image after Treatment with Dermocorticoids and 10% Salicylic acid Vaseline

3. Discussion

Bazex syndrome is an obligatory paraneoplastic dermatosis with a pathophysiological mechanism that remains poorly understood, although alcohol and tobacco consumption are identified as the primary risk factors. It precedes the diagnosis of the neoplasm in 67% of cases and develops after diagnosis in 15% of cases. It often affects individuals in middle age, between the 4th and 7th decade, with a clear male predominance [3]. Clinical presentations encompass reddish to purplish psoriasiform patches with poorly defined borders, displaying a distinctive symmetric, bilateral, and acral distribution. It typically progresses through three stages [4]. Stage 1: Initial presentation involves symmetrical invasion of the ear helices, nose, fingers, and toes. Early lesions are flat with indistinct borders, occasionally displaying crusts and scaling, typically without associated symptoms except for pruritus, which is commonly reported.

Stage 2: As the underlying malignancy progresses, potentially leading to local or metastatic spread, a more widespread eruption of the skin occurs. Characteristic red to purple scaly or crusted plaques develop on the cheeks, with scaling appearing on the palms and soles, excluding the central areas. Fissures, mainly on

the feet, and nail involvement such as subungual hyperkeratosis, onycholysis, longitudinal streaks, and yellow discoloration may cause discomfort and functional impairment. Stage 3: This final phase corresponds to untreated or treatment-resistant carcinoma. Existing signs and symptoms persist, while papulosquamous lesions start to appear on the trunk, elbows, knees, and dorsal aspects of the hands and feet. Occasionally, vesicles and bullae may arise, particularly on the fingers, hands, and feet. Histological features of APB are unspecific with spongiosis, hyperkeratosis and areas of parakeratosis, interface change including vacuolar degeneration and dyskeratotic keratinocytes, and in the dermis, a lymphohistiocytic inflammatory infiltrate and papillary dermal fibrosis [5].

The underlying cause of Bazex syndrome remains unclear. Some researchers have suggested an immunological mechanism based on the presence of immunoglobulins (IgG, IgM, IgA) and complement (C3) along the basal membrane in both affected and unaffected skin. Others have noted that serum levels of squamous cell carcinoma antigen (SCC-Ag) correlate with the severity of skin lesions in certain patients, further supporting the involvement of an immunological process. Additionally, the co-occurrence of Bazex syndrome with other autoimmune conditions like vitiligo and alopecia areata has led to speculation about an autoimmune mechanism [2]. It is often associated with squamous cell carcinoma of the upper aerodigestive tract. However, its association with the hepatoid adenocarcinoma (ADC) of the lung has never been described. This histological subtype constitutes an uncommon malignant tumor primarily found in the stomach. It has also been documented to arise from other organs such as the bladder, pancreas, and ovary.

When this liver-like ADC develops in the lung, it is termed hepatoid adenocarcinoma of the lung (HAL), which represents a small proportion (2.3%) of all hepatoid ADC cases and is associated with a dismal prognosis [6]. Treatment of the underlying tumor can lead to a reduction or disappearance of the cutaneous signs of APB. Otherwise, other treatments may improve it such as topical or systemic steroids, oral psoralen-UVA phototherapy, and retinoids [4]. Vitamin D analogs like calcipotriol and cholecalciferol have also been reported as beneficial in some cases, contributing to lesion regression by modulating epidermal proliferation and immune responses. When Bazex syndrome is suspected, the initial step in evaluation, and perhaps the most crucial, involves conducting a comprehensive medical history and physical examination to guide further diagnostic tests. A standard workup typically includes a thorough otolaryngological examination, chest X-rays, complete blood count, erythrocyte sedimentation rate, biochemical profile (including iron studies), tumor markers, and stool occult blood testing.

If the ear, nose, and throat examination and chest X-rays yield no significant findings, additional investigations may entail upper gastrointestinal endoscopy. In the presence of anemia or occult blood in stool, colonoscopy should be considered. Depending on clinical history and physical examination findings, imaging studies such as chest, abdominal, or pelvic scans may be warranted. If all tests come back negative, the patient should be evaluated every three months with a detailed medical history and thorough clinical examination, including otolaryngological assessment, along with basic laboratory tests [2]. Our case is an unusual case, firstly due to the clinical presentation solely involving the palms and soles, which allowed the diagnosis of hepatoid adenocarcinoma of the lung despite being revealed at the metastatic stage.

4. Conclusion

In summary, Bazex syndrome presents a unique challenge due to its association with underlying malignancies. Understanding this relationship is essential for early detection and appropriate management. Further research is needed to explore the pathophysiological mechanisms linking these conditions and to improve diagnostic and therapeutic strategies.

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