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Papuloerythroderma with Associated Non Hodgkin's Lymphoma: A Rare Entity

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Abstract

Papuloerythroderma of Ofuji was first described by Ofuji in 1984. This rare entity is characterized by presence of polygonal, erythematous to brown papules, covering the entire body surface, with a characteristic sparing of body folds (deck chair sign). On hematological investigations, there is characteristic eosinophilia with lymphopenia. It may or may not be associated with underlying malignancies. We report a case of a 81 year male patient where a diagnosis of Papuloerythroderma secondary to non-Hodgkin`s lymphoma was made based on the criteria laid by Torchia et al. Our patient satisfied 4 out of 5 major criteria and all 5 of the minor criteria. This case is reported because of its rarity and characteristic clinical presentation.

Key words: Eosinophilia; Leukocytosis; Lymphoma; Prednisolone

Introduction

Papuloerythroderma of Ofuji is a distinct clinical entity described by Ofuji in 1984 after observing 4 cases with similar presentations.[1] There were solid flat topped, erythematous to brownish pruritic papules present extensively over entire trunk and extremities and typically sparing the flexural areas. It was seen more commonly in elderly males. After observing 170 cases, Torchia et al described preceding illnesses in some patients which include neoplasms, bacterial or viral infections, drugs and cutaneous T cell lymphoma and proposed criteria for diagnosis of papuloerythroderma of Ofuji, which have been discussed later on.[2] Here we report a case of an elderly male with classical cutaneous and hematological features of papuloerythroderma with associated non Hodgkin's lymphoma.

Case Report

A 81-year-old male presented to our outpatient department with complain of reddish, raised, itchy skin lesions all over body since last one month which had exaggerated in the last 8 days. The lesions started from thighs and then spread gradually to involve the whole body. During the last seven days, there was increased redness in lesions and extreme pruritus. He was also having a swelling over his left shoulder since 15 days which was painful and interfering with his daily activities, so he had taken an excessive dose of ibuprofen 10 days back. Patient did not give history suggestive of any preceding infections. There was no history of significant weight loss, alteration in bowel habits, low grade fever, chronic cough or difficulty in micturition. There was no personal history of atopy or adverse drug reaction in past. His general examination was unremarkable except for generalized significant lymphadenopathy. Bilateral cervical (1.5cm), axillary (2cm) and inguinal lymph nodes (3cm) were enlarged, firm, non-tender and mobile. There was no palpable organomegaly. On mucocutaneous examination, there were multiple erythematous flat topped papules which

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coalesced at some places to form plaques covering almost 90 % of body areas (Fig 1). The flexural areas and skin folds were typically spared (deck chair sign) (Figure 2).

There was no mucosal involvement. Palms and soles were normal. The swelling over the left shoulder was soft, approximately 2x2 cm in size, non-tender, non-fluctuant with no overlying skin changes. Clinical possibilities of papuloerythroderma of Ofuji; cutaneous T cell lymphoma; leukemia cutis and Kimura's disease were considered, and patient was admitted for further management. On hematological examination, his peripheral blood smear showed leukocytosis of total leukocyte count of 22,300 with eosinophilia (36%) with relative lymphopenia (2%). No atypical cells were seen. His absolute eosinophil count was 2560 cells per microliter (N-30-350) and serum IgE levels was >2000 UI/ml(N- 150-300). His liver and renal function tests were normal. Radiological investigations including chest X ray and abdominal ultrasonography were normal. Serum prostate specific antigen was within normal limits. Stool for occult blood was also negative. Ultrasonography(USG) of the shoulder swelling showed a 19x5 mm collection with internal echoes within the substance of subscapularis muscle and tendon. USG guided fine needle aspiration cytology (FNAC) was done from the swelling and the cytological examination revealed it to be synovial fluid with predominant macrophages, few crystals and lymphocytes. FNAC of cervical lymph nodes showed lymphoid series of cells. FNAC of axillary lymph nodes showed eosinophils, polymorphs and lymphoid series of cells amidst a hemorrhagic background. A 5 mm punch biopsy from the skin lesions over back was sent. Histopathological examination showed unremarkable epidermis with upper and mid dermal perivascular infiltrate of lymphocytes, plasma cells and eosinophils with focal perifollicular infiltrate (Figure 3). Excisional lymph node biopsy of the largest inguinal lymph node on left side was done and the histopathology was consistent with atypical lymphoid proliferation-non-Hodgkin's lymphoma (angioimmunoblastic T cell lymphoma)(Figure 4 & 5).

On the basis of characteristic clinical features, histopathology, and laboratory investigations, the final diagnosis of papuloerythroderma secondary to non-Hodgkin's lymphoma was made. Patient was given symptomatic treatment and was started on tab prednisolone 30 mg once daily in morning. An orthopedic consultation was taken for the shoulder swelling and physiotherapy was initiated. There was significant improvement in the cutaneous lesions within 3 days of starting corticosteroids. The dose of prednisolone was tapered on discharge and he was referred to an oncologist for further evaluation and workup. However, the patient did not visit an oncologist and succumbed after 1 month.

Figure 1: Multiple discrete as well as coalesced erythematous papules over face and neck, abdomen, back and lower limbs.

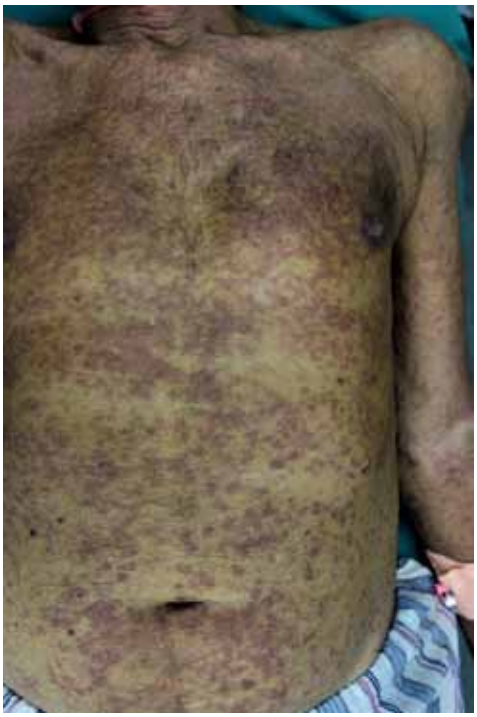

Figure 2: Multiple erythematous papules over abdomen with sparing of body folds (Deck chair sign).

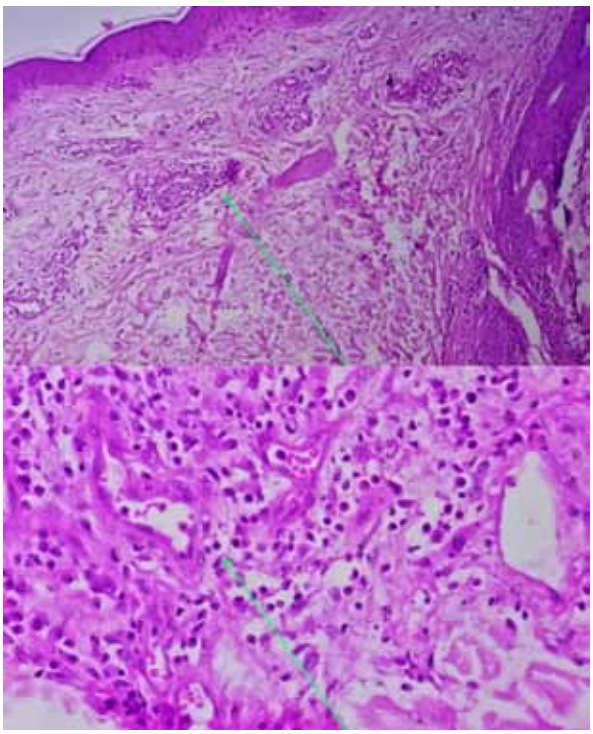

Figure 3: Unremarkable epidermis with perivascular infiltrate of lymphocytes, plasma cells and eosinophils (green arrow) in upper and mid dermis.(a) H& E stain 100x, (b) H& E stain 400x

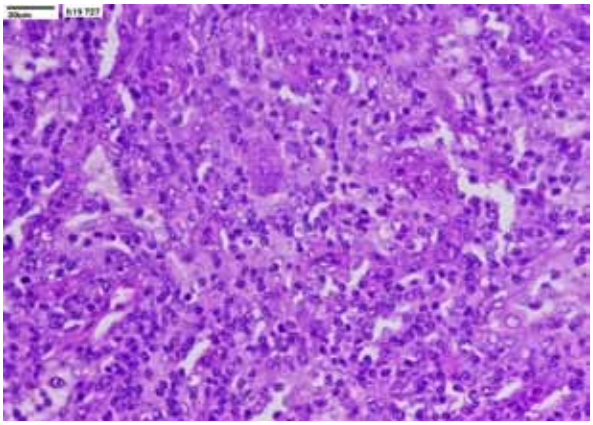

Figure 4: Atypical lymphoid proliferation in the lymph node suggestive of Non Hodgkin's lymphoma (H & E 400x)

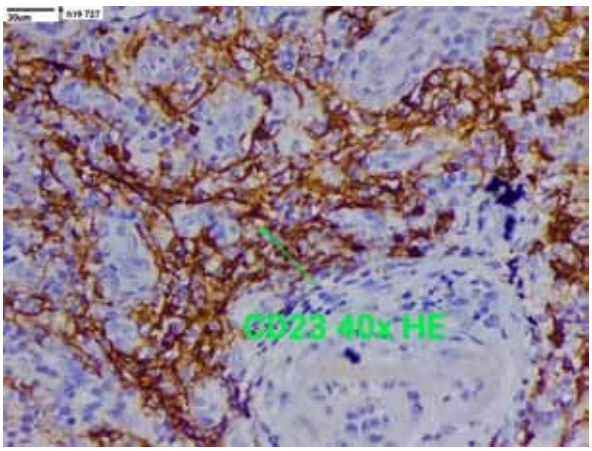

Figure 5: CD23 marker positive in lymph node biopsy

Discussion

Papuloerythroderma of Ofuji is an intensely pruritic skin condition which has certain characteristic clinical features. It presents clinically with multiple erythematous polygonal intensely pruritic papules involving almost the whole body. In 1986, Farthing et al observed a typical sparing of the body folds and pressure areas of the skin in patients with papuloerythroderma and described it as "deck chair sign".[3] Deck chair sign, though being highly characteristic of papuloerythroderma of Ofuji, is also seen in certain other diseases such as erythroderma secondary to atopic dermatitis and psoriasis, acanthosis nigricans, leprosy, contact dermatitis or may be idiopathic.[2,4] Associated clinical and hematological features include lymphadenopathy, peripheral eosinophilia, and raised serum IgE level.[5]

After about 25 years of the disease description by Ofuji, Torchia et al reviewed the literature of 170 cases of papuloerythroderma of Ofuji and gave the diagnostic criteria as outlined in table 1. [2]

Based on the above criteria, papuloerythroderma has been classified as primary or idiopathic

Table 1: Diagnostic criteria for papuloerythroderma of Ofuji

Major criteria	Fulfilled in our case	Minor criteria	Fulfilled in our case
1. Erythroderma like eruptions	+	1. Age > 55 years	+
2. Sparing of skin folds and creases.	+	2. Male sex	+
3. Pruritus	+	3. Peripheral and tissue eosinophilia	+
4. Histopathological exclusion of cutaneous T cell lymphoma (and other skin diseases)	+	4. Increased serum IgE	+
5. Work up and follow up for exclusion of association with malignancy, infections, drugs and atopy.	-	5. Peripheral lymphopenia	+
The diagnosis of idiopathic form requires presence of all 5 major criteria			

papuloerythroderma; secondary papuloerythroderma and papuloerythroderma like cutaneous T cell lymphoma.

Various preceding factors have been described in association with secondary papuloerythroderma. These include neoplasms (gastric cancer, lymphomas, leukemias being the most common), drugs (isoniazid, etretinate, furosemide, ranitidine, aspirin and ticlopidine)[2,6-8] and infections.

Management of papuloerythroderma of Ofuji includes identification and removal of any secondary cause. It has been observed by Teraki et al[9] that few patients of papuloerythroderma with underlying neoplasms achieved complete remission after treatment of the concomitant tumor. Those with idiopathic disease or papuloerythroderma of Ofuji have no gold standard of therapy at present. Topical and/ or systemic corticosteroids are the most widely used first line therapy, both alone and in combination with antihistaminic drugs. Other modalities include phototherapy/photochemotherapy[10], systemic retinoids[11], cyclosporine[12], interferon a[13] and azathioprine[14]. Successful treatment of papuloerythroderma of Ofuji with dupilumab has been reported recently by Teraki et al.[15]

Papuloerythroderma poses more of a diagnostic challenge to the dermatologists as concomitant cutaneous or visceral malignancies need to be ruled out. Prognosis depends on any underlying cause. In our patient, there was no evidence of cutaneous malignancy on histopathological examination, however we found an underlying peripheral T cell lymphoma in the patient. Thus, high level of suspicion should be practiced in all cases of papuloerythroderma.

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