Ind J Dermatol Venereol Leprol 1995; 61 : 305-7

VESICULAR AND BULLOUS ERUPTIONS IN TROPICAL (FILARIAL) EOSINOPHILIA

*Ramesh Kumar G, ***Kumaraswamy Reddy M, **Premanand R

A case of tropical (filarial) eosinophilia (TE) presented with vesicular and bullous eruptions.The patient had skin and mucosal blistering. Histopathological changes were that of bullous pemphigoid.The patient had very high eosinophilia with abnormal vacuoles in the cytoplasm. ELISA test was positive for filarial antibodies. There were no pulmonary signs or symptoms. X-ray chest was normal.The patient responded well to diethylcarbamazine.

Key Words: Vesicular and bullous eruptions, Tropical (filarial) eosinophilia

Introduction

Vesicular and bullous eruption (VBE) is a presenting feature in a variety of dermatological disorders such as bullous pemphigoid, pemphigus, eczema etc, which are often associated with peripheral eosinophilia. But VBE in tropical (filarial) eosinophilia (TE) has not been reported so far to the best of our knowledge. One such case of TE presenting with vesiculo-bullous lesions is herein reported.

Case Report

A 16-year-old girl coming from an endemic area of filariasis presented with mildly pruritic recurring blisters of skin of 6 months duration.The eruption started spontaneously on the ears, but without history of constitutional symptoms or drug intake.There was history of nasal irritation followed by blistering of nasal mucosa.The eruption subsided without treatment, but reappeared again.After the 3rd or 4th episode she noticed bullae on face and limbs.As the lesions did not subside spontaneously, she was treated outside with small dose of oral prednisolone for a short period.She respondend well but the eruption recurred again, at which time the patient was seen by us. Physical examination revealed randomly scattered flacid to tense vesicles, bullae (0.5-2 cm size), erosions and crusts involving normal looking or erythematous skin of face, scalp, ears, shoulders, breasts, back, upper adbomen and upper limbs. Intermingled with these lesions were hyper and hypopigmented macules. Bulla spread sign was positive and Nikolsky sign was negative.Tiny erosions on nasal mucosa were observed.Skin appendages were normal.The patient was otherwise normal.

Tzanck smear was negative for acantholytic cells, but a few eosinophils could be seen. Skin biopsy showed a large sub-epidermal bulla containing eosinophils and a few neutrophils entangled in fibrian (Fig.1). Dermis showed perivascular infiltrate of eosinophils admixed with mononuclear cells.Histologically the lesion simulated pemphigoid. Haemotological investigations revealed a total count of 14,800/mm^3, differential count of N 4%, E 87%, L 9%, and M 0 l , and platelets of 1.8 lacs 1/mm^3. Peripheral smear showed RBC with mild microcytic and hypochromic features; many of the eosinophils (25.2%)

From the *Departments of Dermatology and **TB and Chest Diseases, SV Medical College, and ***Department of Pathology, Sri Venkateswara Institute of Medical Sciences, Tirupati-517501, India.

Address correspondance to : Dr Ramesh Kumar G

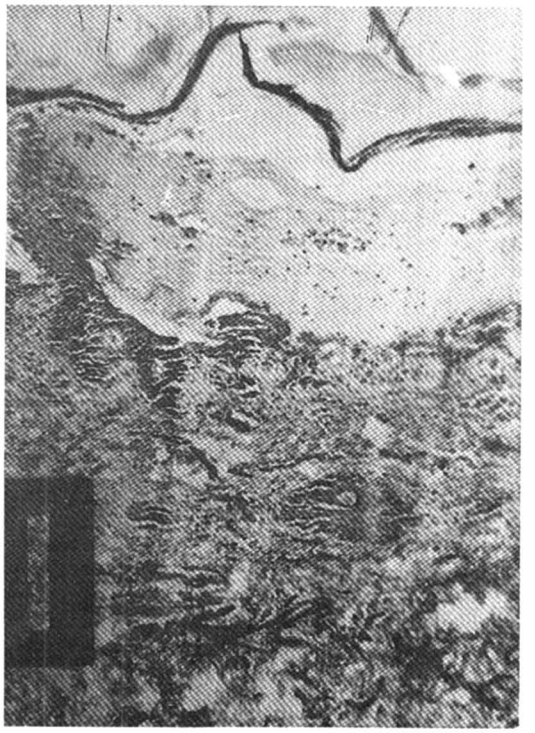

Fig. 1. Subepidermal bulla showing eosinophils and a few neutrophils entangled in fibrin (H&E x40).

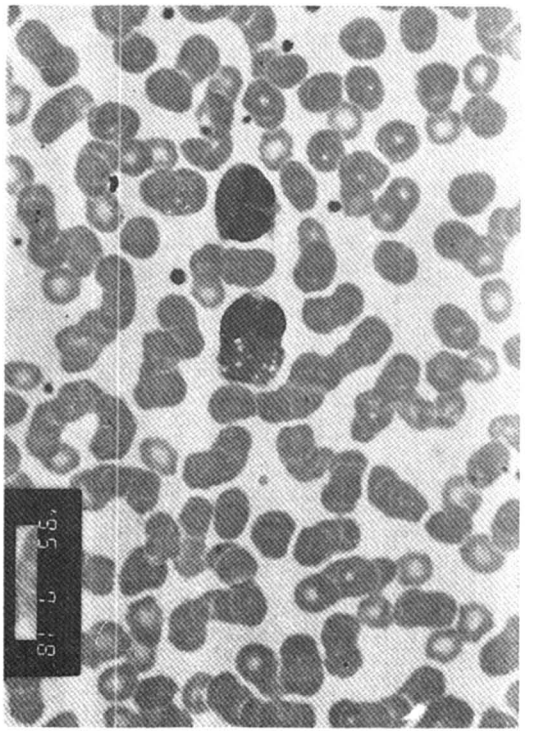

Fig. 2. Peripheral smear showing vacuoles in eosinophils (Leishman's stain x 100).

showed abnormal vacuoles in the cytoplasm (Fig.2). No filarial parasite could be seen. Absolute eosinophil count was 3800/mm^3. ESR was high (100 mm/1st hour), and haemoglobin was 10.2 gms%. ELISA test was positive for filarial antibodies.All other haematological investigations were normal.Stool examination was normal.The patient had no sign or symptom of pulmonary involvent. Chest x-ray was normal.

The patient was put on diethylcarbamazine 100 mg tds. Within 15 days the lesions subsided completely and the treatment was continued for 2½ months and she was followed up for 1½ years at monthly intervals.The girl is yet to develop a new lesion.Blood counts which were repeated 2 months after starting the treatment showed, a TC, 8,500/mm^3; DC, N 40%,L 43%,E 16%,M 1%; ESR, 30 mm/ 1st hour; and an absolute eosinophil count of 1,275/mm^3, indicating improvement in the blood picture also.Repeat Peripheral smear too was negative for microfilaria.

Discussion

The pathogenic role of eosinophils in bulla formation in pemphigoid is well known, but it does not respond to diethylcarbamazine. Most of the cutaneous eosinophilic disorders can be excluded on clinical and histological basis. Bullous lesions can occur in well's disease but it has a distinctive histological exhibition unlike the present case. Hypereosinophilic syndrome is characterized by persistent

eosinophilia and diffuse organ infiltrations including skin. Systemic signs and Symptoms are the cardinal features in this syndrome. Cutaneous manifestation which are seen in 27% of the cases include pruritic, erythematous, maculopapular,nodular or haemorrhagic eruptions, but no vesicular lesions.[1] In eosinophilic dermatitis also bullous lesions were not described.[2]

Tropical (filaria) eosinophilia, a systemic disease consisting predominently of respiratory symptoms, malaise, fever and weight loss, is diagnosed on the following criteria:[3,4] the patient should be from an endemic area of filariasis, absolute eosinophil count of $3x10^9/L$ ($3000/mm^3$) or more, the day and night blood smear for microfilaria should be negative, high titers of antibodies to filarial parasite, increased levels of Ig E (1000 units or more) and therapeutic response to diethylcarbamazine. There is a spectrum of disease ranging from asymptomatic eosinophilia to a severe chronic constitutional illness with asthmatic episodes and densities in chest radiographs.[4] Our patient has fulfilled most of the criteria for the diagnosis of TE. IgE could not be done for the want of facilites.The unusual feature in our case of TE is the cutaneous eruption consisting of vesicles, bullae and erosions.

A striking feature of blood eosinophils in this patient is the presence of vacuoles, a finding which was observed earlier in many cases of TE.[5] Normal controls may also show vacuolations, but the percentage is always high in TE.The vacuolations and partial degranulation indicates that the eosinophils are activated in vivo. The antigen-antibody complexes engulfed by the eosionophils are acted upon by lysozomes.This results in vacuolation of eosinophils.

Since eosinophils appear to play an important role in bulla formation in pemphigoid, similar pathophysiological mechanisms might have resulted in the cutaneous eruption in the present case.

Acknowledgements

The authors are thankful to Dr V Kumaraswamy, MD, MAMS, PhD, Assistant Director, ICMR, Madras, and his staff for their help in doing ELISA test (antibody titre to filarial parasite), an important test in confirming the diagnosis.

References

1. Kazmeroski JA, Chusid MJ,et al.Dermatological manifestations of hypereosinophilic syndrome. Arch Dermatol 1978; 114: 531-5.
2. Nir MA, Westfried M. Hypereosinophilic dermatitis. Dermatologica 1981; 162: 444-50.
3. Neva FA, Ottesen FA. Tropical (filarial) eosinophilia.NN Engl J Med 1978; 298: 1129-31.
4. Christopher JF, Kumaraswamy V. Tropical (filarial) eosinophilia Semin Haemotol 1982; 19: 107-15.
5. Saran R, Sanyal R K Diurnal variatitions in eosinophil count and vacuolation of eosinophils in tropical eosinophilia.Ind J Chest dis 1971, 15: 209-13.