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Eosinophilic annular erythema

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Abstract

Eosinophilic annular erythema is a rare benign recurrent disease, originally described in children, characterized by the recurrent appearance of persistent non-pruritic, urticarial annular lesions. Histologically a perivascular infiltrate composed of lymphocytes and abundant eosinophils in the dermis is exhibited. We report the case of a 15-year-old boy who presented with a 4-year history of recurrent flares of erythematous annular plaques on the trunk and extremities. The lesions resolved spontaneously after 3-5 weeks with no accompanying signs. A biopsy showed a mainly perivascular lymphocytic infiltrate with numerous eosinophils in the dermis.

Introduction

Numerous dermatoses can present clinically as figurate erythemas. The course of the symptoms and laboratory data are not always defining and a histopathological study is often required to reach the diagnosis.

Case report

A 15-year-old boy with a history of bronchial asthma presented because of a recurrent eruption over the previous four years of mildly pruritic erythematous plaques that enlarge, but cleared in the center to form annular plaques, localized to the trunk and extremities. The lesions disappeared spontaneously after a few weeks leaving no atrophy or scars. The patient also reported remission rapidly after taking oral steroids for his asthma, but recurrence on ceasing this medication.

Physical examination showed non-desquamative, annular and arciform erythematous plaques with central clearance, distributed diffusely over the trunk and extremities, but respecting the face, neck, palms, and soles (Figures 1, 2, and 3).



Figure 1

Figure 1. Annular and arciform erythematous plaques on the trunk



Figure 2

Figure 2. Annular papules and plaques on the lower limbs



Figure 3

Figure 3. In the center can be seen the initial papular lesion that then grew centrifugally, clearing in the center (on the right)

Laboratory studies showed a normal blood count, with no leukocytosis or eosinophilia. ANA + 1/80 with a speckled pattern. TSH 1.7 (normal < 1.2). No alterations were seen in the creatinine, urea, liver function tests, or urine sediment.

A punch biopsy revealed mild focal hydropic changes in the basal layer of the epidermis. Of note in the papillary and reticular dermis was an extensive infiltration of eosinophils with a few lymphocytes and some neutrophils, but no flame figures or granulomas (Figures 4 and 5).

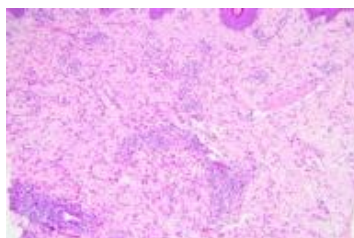


Figure 4

Figure 4. Epidermis with no alterations. The superficial and deep dermis contain a perivascular inflammatory infiltrate. (H&E x4)

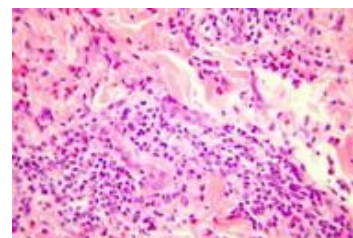


Figure 5

Figure 5. At greater magnification the inflammatory infiltrate appears to be composed of lymphocytes and abundant eosinophils. (H&E x40)

The clinical data and the histopathological findings were consistent with a diagnosis of eosinophilic annular erythema.

Discussion

Eosinophilic annular erythema (EAE) is a rare condition initially described by Peterson and Jarratt [1] as annular erythema of infancy, characterized by the recurrent appearance of erythematous annular plaques, with disease-free periods, mainly affecting the trunk and extremities. Although the first reported cases concerned children [2, 3, 4], EAE is the name given to the entity when described in adults. Eosinophilic annular erythema is a benign condition not associated with any other accompanying symptoms and which tends to resolve spontaneously over months or years. Histologically, EAE is characterized by the appearance of a superficial and deep perivascular inflammatory infiltrate composed of lymphocytes and abundant eosinophils.

Clinically, the differential diagnosis is with other cutaneous disorders that can also present as figurate erythemas, particularly urticaria, centrifugal annular erythema, disseminated annular granuloma, subacute cutaneous lupus erythematosus, chronic migratory erythema, and urticarial vasculitis. Histologically, the main entity in the differential diagnosis is Wells syndrome, which is characterized by a diffuse inflammatory infiltrate in the dermis with abundant eosinophils, including the so-called “flame figures” composed of deposits of eosinophil major basic protein with degenerated collagen fibers. In EAE, though, the inflammatory infiltrate is mainly localized

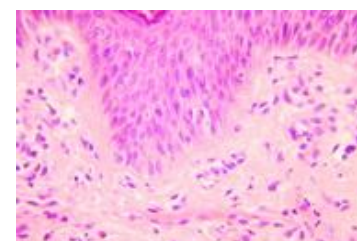


Figure 6

Figure 6. Dermo-epidermal junction with mild focal hydropic changes and absence of colloid bodies or thickened basement membrane. (H&E x40)

perivascularly and there are no flame figures. One of the clinical forms of presentation of Wells syndrome is figurate erythema, but it usually leaves hyperpigmentation and even residual atrophy, unlike EAE, which heals with no sequelae. Another diagnosis that could be considered is lupus erythematosus in which it is characteristic to find an interface dermatitis with vacuolar degeneration of the basilar epithelial layer. However lupus erythematosus is also usually associated with other histological changes, such as the presence of a larger number of epidermal colloid bodies, a thickened basement membrane, mucin deposits in the dermis between strands of collagen, and telangiectases in the upper dermis [5, 6]. All those changes are absent in this case (Figure 6).

There is often rapid disappearance of the lesions of EAE with systemic corticoids, with the lesions reappearing when the steroids are suspended. Indeed, we noted this good response in the patient reported here, with disappearance of the skin lesions during the periods he was taking corticosteroids for exacerbations of his bronchial asthma. Other authors, however, have failed to find such a good response to steroids [7]. In four cases the lesions cleared with antimalarial drugs [8, 9, 10, 11]; the last case also responded spectacularly to indomethacin, though this had to be stopped because of repeated episodes of syncope. Hydroxychloroquine was also considered for our patient, but this was postponed because he had no lesions at the time of follow up.

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