

hyperkeratosis (1–8). These histopathological findings suggest that verrucous-crust herpes zoster might represent an over-response to a chronic infection by VZV. The appearance of verrucous-crust herpes zoster in an immunocompetent patient is an event which, to our knowledge, has never been reported in the literature. In the case we have described, the only hypothesis that can be put forward is that of a VZV infection that became chronic-recurrent as a result of an incorrect therapy: in fact, the patient was previously treated only with topical acyclovir. In immunodepressed patients, the most frequent cause of verrucous-crust herpes zoster is represented by a resistance to acyclovir (1–8). This hypothesis is not plausible in our patient, since therapy with acyclovir by the intravenous route resulted in a rapid, complete and long-lasting resolution of skin lesions.

#### REFERENCES

1. Pahwa S, Biron K, Lim W, Swenson P, Kaplan MH, Sadick N, Pahwa R. Continuous varicella-zoster infection associated with acyclovir resistance in a child with AIDS. *JAMA* 1988; 260: 2879–2882.
2. Linnemann CC Jr, Biron KK, Hoppenjans WG, Solinger AM. Emergence of acyclovir-resistant varicella zoster virus in an AIDS patient on prolonged acyclovir therapy. *AIDS* 1990; 4: 577–579.
3. Jacobson MA, Berger TG, Fikrig S, Becherer P, Moehr JW, Stanat SC, Biron KK. Acyclovir-resistant varicella zoster virus infection after chronic oral acyclovir therapy in patients with the acquired immunodeficiency syndrome (AIDS). *Ann Intern Med* 1990; 112: 187–191.
4. Hoppenjans WB, Bibler MR, Orme RL, Solinger AM. Prolonged cutaneous herpes zoster in acquired immunodeficiency syndrome. *Arch Dermatol* 1990; 126: 1048–1050.
5. LeBoit PE, Límová M, Yen TSB, Palefsky JM, White CR Jr, Berger TG. Chronic verrucous varicella-zoster virus infection in patients with the acquired immunodeficiency syndrome (AIDS). Histologic and molecular biologic findings. *Am J Dermatopathol* 1992; 14: 1–7.
6. Grossman MC, Grossman ME. Chronic hyperkeratotic herpes zoster and human immunodeficiency virus infection. *J Am Acad Dermatol* 1993; 28: 306–308.
7. Vaughan Jones SA, McGibbon DH, Bradbeer CS. Chronic verrucous varicella-zoster infection in a patient with AIDS. *Clin Exp Dermatol* 1994; 19: 327–329.
8. Veenstra J, Van Praag RME, Krol A, Wertheim Van Dillen PME, Weigel HM, Schellekens PTA, et al. Complications of varicella zoster virus reactivation in HIV-infected homosexual men. *AIDS* 1996; 10: 393–399.

Accepted November 19, 1997.

S. Veraldi, L. Gnechi and F. Zorzi  
Institute of Dermatological Sciences, I.R.C.C.S., University of Milan,  
Via Pace 9, I-20122 Milan, Italy

## Erythema Annulare Centrifugum Associated with Pregnancy

Sir,

Erythema annulare centrifugum (EAC) or gyrate erythema starts as erythematous papules or plaques that expand in a centrifugal pattern. The centre of the expanding lesion consists of somewhat hyperpigmented skin and the edge of the lesion has trailing scale behind the advancing border. The condition has been categorized into superficial and deep variants. Vesiculation is rare. The pathogenesis of EAC is not fully understood, but it is thought to represent a cutaneous hypersensitivity to diverse causes (1, 2). Here we report a case of EAC associated with pregnancy

#### CASE REPORT

A 27-year-old Thai woman presented in the 36th week of pregnancy with a 3-week history of skin eruptions on the abdomen and extremities. The skin lesions began with asymptomatic erythematous papules before spreading gradually to form large rings. She was otherwise well and this was her first pregnancy. She took only iron supplement during pregnancy.

Cutaneous examination revealed erythematous polycyclic lesions with central clearing and trailing rim of fine scale on the abdomen, forearms and legs (Fig. 1).

A potassium hydroxide examination was performed and a negative result obtained. Histology of a biopsy specimen from the edge of skin lesion showed a dense perivascular lymphocytic infiltrate in the upper dermis. Direct immunofluorescence was negative for IgG, IgA, IgM, C<sub>1q</sub>, C<sub>3</sub>, C<sub>4</sub> and fibrinogen. The results of the following laboratory investigations were normal: complete blood count, urinary analysis,

serum urea nitrogen, creatinine, liver function test, VDRL and antinuclear antibody.

A diagnosis of EAC was made. One week later she was hospitalized and delivered a healthy baby, weighing 2460 g, whose general condition was good. The improvement of the eruption was noted after delivery. Within 3 days, all skin lesions had almost disappeared. No evidence of recurrence was seen after 6 months.

#### DISCUSSION

There are several reports of EAC in association with a variety of underlying disorders, including infection (bacterium, virus, fungus or parasite), drugs (salicylates, chloroquine, hydrochlorothiazide or penicillin), blue cheese *Penicillium* and neoplasm (1–4). Unfortunately, the evidence for these associations is based on one or only a few patients. Two aetiologic factors, including cancer and dermatophytes, are more significant in that they have been reported much more frequently. In addition, there is experimental evidence to suggest dermatophytes as a cause of EAC (1). Transformation of a *Trichophyton* intradermal skin test into a typical EAC was described. The tumours associated with EAC may be solid or haematologic, benign or malignant. EAC resolved following successful treatment of the neoplasia and recurrence of EAC was noted concurrently with tumour relapse (5). However, the rapid resolution of EAC post-delivery in our patient suggests a causal relationship. To our knowledge, no case of EAC has been reported in association with pregnancy. Kelly et al. (6)



Fig. 1. Erythematous polycyclic lesions with trailing scale on left forearm.

reported a skin lesion resembling EAC in pregnant woman, but the histology showed mild leukocytoclastic vasculitis. So the diagnosis was consistent with annular vasculitis.

The exact mechanism of the association of pregnancy and EAC is unknown. However, during pregnancy, there are significant and complex physiological changes, especially protein and steroid hormones. These hormones may influence the immunology and inflammatory response of the skin. Furthermore, there have been previous reports of EAC which have also described following oestrogenic compounds (3) and menstrual cycle (2). We therefore believe that EAC in our patient is causally related to pregnancy. The eruptions dramatically resolved within a few days of delivery.

#### REFERENCES

1. White JW Jr. Gyrate erythema. *Dermatol Clin* 1985; 3: 129–139.
2. Tsuji T, Kadoya A. Erythema annulare centrifugum associated with liver disease. *Arch Dermatol* 1986; 122: 1239–1240.
3. Goette DK, Beatrice E. Erythema annulare centrifugum caused by hydrochlorothiazide-induced interstitial nephritis. *Int J Dermatol* 1988; 27: 129–130.
4. Summerly R. The figurate erythemas and neoplasia. *Br J Dermatol* 1964; 76: 370–373.
5. Yaniv R, Spielberg O, Shapiro D, Feinstein A, Ben-Bassat I. Erythema annulare centrifugum as the presenting sign of Hodgkin's disease. *Int J Dermatol* 1993; 32: 59–61.
6. Kelly RI, Cook MG, Marsden RA. Annular vasculitis associated with pregnancy. *Br J Dermatol* 1933; 129: 599–601.

Accepted November 26, 1997.

Charoen Choonhakarn and Pitulak Seramethakun  
Division of Dermatology, Department of Medicine, Faculty of Medicine, Srinagarind Hospital Medical School, Khon Kaen University, Khon Kaen 40002, Thailand.

## Becker's Naevus of the Lower Limb

Sir,

Becker's naevus (pigmented hairy epidermal naevus) is usually located on the shoulder, anterior chest and scapular region. The lesion appears during adolescence and usually hypertrichosis develops a few years later within the pigmented area, with an increase in size of lesion during this period. In the past year we have seen five Becker's naevi involving the lower limb, a site reported in only 3% of the patients (1).

#### CASE REPORTS

##### Case 1

An 18-year-old male who presented with a 4-year history of light brown pigmentation with a central large macule (8 × 6 cm) and scattered smaller macules at the periphery ("splash on" appearance) on the anterolateral aspect of the left thigh. He had noticed hypertrichosis on the pigmented area since 2 years.

##### Case 2

A 15-year-old boy who had developed an asymptomatic dark brown macule (6 × 5 cm) with peripheral scattered smaller light brown mac-

ules on the lateral aspect of the right knee since 8 years. Hypertrichosis was present in the central macule (Fig 1).

##### Case 3

Since 10 years of age, a 24-year-old labourer had had a large dark-brown macule with peripheral light-brown smaller macules extending from the upper border of the left iliac crest to the ankle, involving the lateral aspect of the lower limb. There was no induration or epidermal thickening. Hypertrichosis was conspicuous throughout the larger macule, mainly in the central part.

##### Case 4

A 26-year-old student who had noticed a gradually increasing asymptomatic brown macule extending from the lower third of his thigh to the calf area on the right lower limb since he was 15 years of age. He had noticed increased hair growth in the lesion for the last 5 years.

##### Case 5

A 16-year-old boy who had developed a brownish macule 10 cm in size on the right thigh at the age of 12 years. The lesion had a typical "splash on" appearance in the periphery and hypertrichosis in the central part.