8. Hermes B, Cremer B, Happle R, Henz BM. Phacomatosis pigmentokeratotica: a patient with the rare melanocytic-epidermal twin nevus syndrome. Dermatology 1997; 194: 77–79.
9. Happle R, Barbi G, Eckert D, Kennerknecht I. Cutis tricolor: congenital hyper- and hypopigmented macules associated with a sporadic multisystem birth defect: an unusual example of twin spotting? J Med Genet 1997; 34: 676–678.
10. de las Heras E, Boixeda JP, Ledo A, Happle R. Paired melanotic and achromic macules in a case of phacomatosis pigmentovascularis: a further example of twin spotting? Am J Med Genet 1997; 70: 336–337.

Eczema Infantum and its Prognosis

Regina Fölster-Holst, Michael Weichenthal, Karen Steinsland, Gert Polzhofer and Enno Christophers
Department of Dermatology, Christian Albrechts University of Kiel, Schittenhelmstr.7, DE-24105 Kiel, Germany.
E-mail: rfoelsterholst@dermatology.uni-kiel.de
Accepted February 6, 2004.

Sir,

Eczematous lesions observed in infants are predominantly considered as atopic dermatitis (AD), seborrhoeic dermatitis (SD), intertrigo, napkin dermatitis or scabies. In contrast, contact dermatitis is rarely seen in early childhood. The clinical appearance of these skin disorders is often non-specific and variable, and an exact diagnosis may be quite difficult.

AD is one of the most common skin diseases of childhood. Onset occurs in 60% of children during the first year of life, and in 85% within the first 5 years (1). The disease is characterized by intense pruritus, generalized dry skin, erythema, and later on by visible flexural dermatitis (1). However, there is a variable individual course (2, 3) and the diagnostic criteria as described by Hanifin & Rajka (3), and Archer & Hanifin (4) may sometimes not be met in very young children.

SD, commonly included in the differential diagnosis of AD, appears mostly within the first 3–18 months after birth (2). It is characterized by an inflammatory skin reaction and yellowish, oily scales especially on the head. In contrast to AD, SD does not affect the well-being of the infant, shows less pruritus and lacks a positive family history for atopy. Some authors have shown a progression of SD in early childhood to AD among 15% of their patients (5). Distinction between these diseases, however, represents a problem in early age (6, 7). Age at onset is not helpful in differentiating SD and AD, as both are common within the first 2–3 months of life.

Both intertrigo and napkin dermatitis show a characteristic body site distribution. Scabies leading to eczema may sometimes be difficult to distinguish from AD (8). The history and the presence of additional symptoms helps to distinguish AD from complex conditions like Wiskott-Aldrich syndrome or ichthyosiform syndromes like Comèl-Netherton syndrome (9).

The term *eczema infantum* has long been used to describe all kinds of eczema observed in early age, when a definite diagnosis is uncertain. The aim of this survey was to study what happens among infants, when re-evaluated after a diagnosis of eczema infantum was given at first visit.

PATIENTS AND METHODS

The charts of all patients up to 3 years of age presenting to our department with eczema between 1991 and 1997 were reviewed. After applying common diagnostic criteria for diagnosis of AD (3, 4), SD, and other forms of well recognized eczematous diseases in early childhood, 49 children (29 boys, 20 girls, median age 7 months, range 2–38 months), had a diagnosis of eczema infantum. A follow-up visit of these patients was performed after 4.5 years on average. Each patient was seen by the same dermatologist who assessed a detailed history and physical examination. We established two different groups: children with persisting or recurrent eczema that fulfilled the criteria of AD (3, 4), and children without any signs of skin alteration for the last 4 months. By means of a questionnaire, possible predisposing factors for AD were studied including positive atopic history, living conditions (10), number of siblings, presence of pets at home, breastfeeding, smoking habits at home (parents or others), adverse reactions to food and vaccination status.

Statistical analysis was done using a standard software package (SPSS V.9.0; SPSS GmbH, Munich, Germany). Continuous variables are presented with their medians and comparisons were made by using the U-test (Wilcoxon, Mann and Whitney). Rates and proportions were compared by mean of Fisher's exact test.

RESULTS

At follow-up, 23 (47%) of the children with eczema infantum showed persistent eczematous symptoms (9 girls, 14 boys; ratio 1:1.6). All cases could be classified as AD according to the aforementioned criteria and were assigned to group 1. Nine (18%) of the children had no symptoms at follow-up but the parents reported recurrent eczema compatible with a diagnosis of AD and these children were also classified in group 1. The remaining 17 children (35%; 8 girls, 9 boys; ratio 1:1.12) had been free of eczema for at least the last 4 months (group 2). Table I shows demographic and anamnestic data of the patients.

The onset of eczema was slightly earlier in group 1,

Table I. *History, demographic and environmental characteristics of the patients in group 1 (atopic dermatitis at the time of follow-up) and group 2 (disappearance of eczema at the time of follow-up)*

Parameter	Group 1 ($n=32$)	Group 2 ($n=17$)
Gender (M/F)	21/11	8/9
Median age of onset of eczema (range)	2 months (0.2–12.0)	3 months (0.2–11.0)
Family history		
atopic dermatitis (%)	16 (50)	6 (35)
allergic rhinitis (%)	15 (47)	4 (24)
asthma (%)	13 (41)	2 (12)
Patient's history		
allergic rhinitis (%)	9 (28)	3 (18)
age at onset	4.6 years	8 years
asthma (%)	7 (22)	1 (6)
age of onset	4.9 years	6 years
First-born children (%)	15 (48)	3 (17)*
At least one older sibling (%)	9 (28)	9 (53)*
Place of residence		
rural (%)	11 (34)	11 (65)
urban (%)	21 (66)	6 (35)*
Keeping pets		
no (%)	28 (88)	16 (94)
yes (%)	4 (13)	1 (6)
Smoking at home		
no (%)	23 (72)	12 (71)
yes (%)	9 (28)	5 (29)
Breastfeeding		
no (%)	8 (28)	6 (38)
$\geq$6 months (%)	13 (45)	4 (25)

*$p<0.05$.

with a median of 2 months as compared with 3 months for group 2. The clinical appearance of eczema was similar in both groups, mainly represented by diffuse erythematous rashes with mild scaling. However, children in group 2 with absence of eczema at re-evaluation were more likely to have involvement of the diaper area ($p<0.05$) and axillae ($p<0.05$), but had never had eczema on wrists, ankles, back of the hands, neck, earlobe or anterior chest like patients in group 1. Facial involvement was common in both groups (52–53% in group 2). Parents in group 1 reported a much higher incidence of pruritus in their children (58% vs 12% in group 2; $p<0.01$).

A positive family history for atopic diseases was more frequent in group 1 vs group 2: 50% vs 35% for AD, 47% vs 24% for allergic rhinitis, and 41% vs 12% for asthma ($p<0.05$). At the time of re-examination there was a higher percentage of children in group 1 who had developed allergic rhinitis and asthma as compared with group 2 (29% vs 18%, 23% vs 6%, respectively; $p>0.05$). Adverse reactions to food were similarly reported in both groups (29% vs 30%).

Children in group 1 were significantly more often first-born children (48% vs 17%; $p<0.05$) and 66% of patients in group 1 grew up in an urban area as compared with 35% of children in group 2 ($p<0.05$). In both groups, only a minority of families kept pets (13% vs 6%; $p>0.05$). The smoking habits at home (parents and others) and vaccination status (tuberculosis, measles, mumps, rubella, *Haemophilus influenzae b*) of the children were similar in both groups. Exclusive breastfeeding was performed for a longer period of time in group 1 (median 5.0 months) than in group 2 (median 2.0 months). Also, more mothers in group 1 had breastfed their children for at least 6 months (45% vs 25%).

DISCUSSION

Two-thirds of our patients first diagnosed with eczema infantum had developed AD at follow-up. In these cases, eczema infantum indeed appeared to be an early, yet non-specific manifestation of AD.

At the time of the follow-up, one-third of the children did not show eczema any more. In these infants the aetiology of eczema remains unknown without a further classification. The diagnosis eczema infantum can be used as a working diagnosis to describe eczema of unknown origin in infants until the course of the disease allows a definite diagnosis such as AD.

The follow-up examination revealed that the children with AD (persistent and recurrent; group 1) expressed multiple skin alterations accompanied by pruritus, erosions and excoriations. On their first visit children in group 2 had skin changes in areas not normally affected by infantile AD, e.g. in the area covered by the diaper or the axillae. The morphological skin changes with white pityriasiform scales on erythema argue against the diagnosis of SD, as well as the body site distribution.

Our environmental and lifestyle findings are in line with the hygiene hypothesis (10–12). In group 2 with disappearance of eczema infantum at follow-up, there were significantly more children with one or more older siblings than in group 1. In addition, significantly more children in group 2 grew up in a rural area. However, the predictive value of these factors needs further evaluation.

REFERENCES

1. Rajka G. One definition and framework of AD. Acta Derm Venereol Suppl 1989; 144: 10–12.
2. Sehgal VN, Jain S. AD: clinical criteria. Int J Dermatol 1993; 32: 628–637.
3. Hanifin JM, Rajka G. Diagnostic features of AD. Acta Derm Venereol Suppl 1980; 92: 44–47.
4. Archer CB, Hanifin JM. Recognizing atopic dermatitis. Diagnosis 1987; 3: 91–96.
5. Menni S, Pistritto G, Gianni E. Infantile seborrhoeic dermatitis. Seven year follow-up and some prognostic criteria. Pediatr Dermatol 1989; 6: 13–15.
6. Podmore P, Burrows D, Eady DJ, Stanford CF. Seborrhoeic eczema – a disease entity or a clinical variant of AD? Br J Dermatol 1986; 115: 341–350.
7. Yates VM, Kerr RE, MacKie RM. Early diagnosis of infantile seborrhoeic dermatitis and atopic eczema – clinical features. Br J Dermatol 1983; 108: 633–638.

8. Chosidow O. Scabies and pediculosis. Lancet 2000; 355: 819–826.
9. Saurat JH. Eczema in primary immune deficiencies: clues to the pathogenesis of AD with special reference of the Wiskott-Aldrich syndrome. Acta Derm Venereol Suppl 1985; 114: 125–128.
10. Filipiak B, Heinrich J, Schäfer T, Ring J, Wichmann HE. Farming, rural lifestyle and atopy in adults from southern Germany – results from the MONICA/KORA study Augsburg. Clin Exp Allergy 2001; 31: 1829–1838.
11. Strachan DP. Hayfever, hygiene and household size. BMJ 1994; 299: 1259–1260.
12. Kilpelainen M, Terho EO, Helenius H, Koskenvuo M. Farm environment in childhood prevents the development of allergies. Clin Exp Allergy 2000; 30: 153–157.

Leukaemia Cutis Developing in a Pressure Ulcer

Hiroshi Watanabe, Ryuhei Okuyama, Hachiro Tagami and Setsuya Aiba
Department of Dermatology, Tohoku University Graduate School of Medicine, 1-1 Seiryo-machi, Aoba-ku, Sendai, 980-8574, Japan. E-mail: nabe@gonryo.med.tohoku.ac.jp
Accepted March 15, 2004.

Sir,

Leukaemia cutis is an infiltration of systemic leukaemia to the skin. Cutaneous manifestations may be concomitant with or precede the diagnosis of systemic leukaemia, suggesting that a precise diagnosis of leukaemia cutis may facilitate the subsequent therapeutic schedule. In general, leukaemia cutis has no specific predisposition in terms of the site of involvement (1). On the other hand, there are reports of cutaneous infiltrations in skin scars (2, 3). We report a case of leukaemia cutis that occurred in a pressure ulcer without any other cutaneous involvement.

CASE REPORT

In February 1998, a 10-year-old boy developed cough associated with pancytopenia, i.e. white blood cell count 1200/mm^3, haemoglobin 5.1 g/dl and platelet count 17 000/mm^3. Results of his bone marrow biopsy showed hypocellularity with multinuclear erythrocytes, micromegakaryocytes and hypogranular neutrophils compatible with the diagnosis of myelodysplastic syndrome (MDS). In September 1998, he developed high grade fever and leukocytosis with a white blood cell count of 9900/mm^3, including 28% blast cells. Bone marrow aspiration revealed hypocellularity of which 34.4% of the cells consisted of myeloblasts and monoblasts. In the immunohistochemical examination, the blast cells were positive for CD11b, CD13, CD33, CD34 and HLA-DR. We made a diagnosis of transformation from MDS to acute myelomonocytic leukaemia. The patient received chemotherapy composed of cytarabine, mercaptopurine, vincristine and prednisolone. During the therapy, he developed respiratory failure and disseminated intravascular coagulation syndrome, and his immobility resulted in a pressure ulcer on his right heel in October 1998. The ulcer was covered with blackish necrotic material that reached the subcutis. We removed this thick necrosis surgically to prevent secondary infections. One month after debridement, a granuloma-like nodule suddenly appeared within the ulcer, and gradually increased in size. It exhibited a 2-cm diameter, scarlet, dome-shaped granulomatous lesion covered with haemorrhaged blood (Fig. 1). The peripheral blood showed no blast cells at this time.

Suspecting the possibility of pyogenic granuloma, we performed skin biopsy. The biopsy specimen revealed a dense mononuclear cell infiltration in the epidermal defect. The infiltrating cells were characterized by large atypical nuclei, each with a narrow pale eosinophilic cytoplasm. Immunohistochemistry examination demonstrated that the infiltrating cells were negative for CD3, L26 and CD68, while they were partially positive for leukocyte com- mon antigen, neutrophilic elastase and esterase. Although he was treated with a different chemotherapeutic regimen, he died in March 1999.

DISCUSSION

Leukaemia cutis is relatively uncommon, reported in 3.1% of patients with all types of leukaemia (4). Among

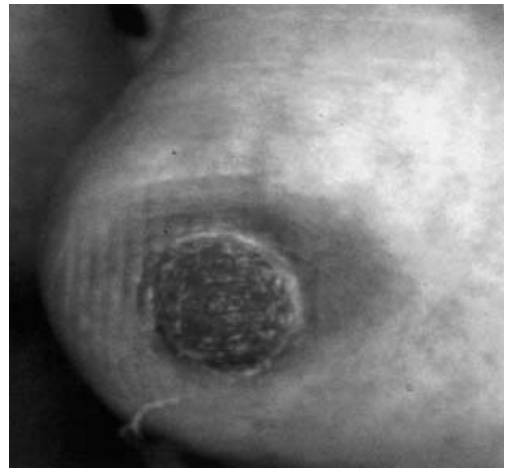

Fig. 1. A 2-cm diameter, scarlet, dome-shaped granulomatous lesion covered with haemorrhaged blood on the patient's right heel.