disease, liver disease, stress or corticosteroid therapy, and by the disappearance of relevant clinical symptoms, i.e. poor hair growth, during zinc supplementation. Furthermore, a rise in P-zinc and S-alkaline values and the delayed appearance of Beau lines on her finger-nails corroborate the diagnosis (8).

Our patient did not show skin changes of severe acute or chronic zinc deficiency (9). The only evidence on examination was a poor scalp hair which gave us an allusion to zinc deficiency, as it looked like a case of AEP, reported earlier (10). Dupré et al. (2) examined poor scalp hair of a severely zinc-deficient AEP infant. They found extensive narrowings of the hair shafts, often associated with wavings, and spearhead-like endings. On using polarized light, oblique striae of the hair shafts in association with areas of trichonodosis were visible. Our patients exhibited similar hair abnormalities which disappeared following zinc repletion, and we therefore judge them to be related to, although not specific for a systemic zinc deficiency.

In zinc deficiency the hair growth is decreased or stopped, the decisive factor being the degree of deficiency (9). Striae, an optical phenomenon probably due to qualitative or quantitative changes of the hair shaft, might reflect fluctuations of the protein formation, appearing at close intervals due to a greatly reduced hair growth rate in severe zinc deficiency. In a mild degree of zinc deficiency, similar changes could be expected to appear as more extensive narrowings because of the faster hair growth rate. Beau lines and uneven dystrophic nail plates of acute and chronic zinc deficiency, respectively (8), could be regarded as a parallel phenomenon to these hair changes.

Discoloration of scalp hair which was reversed by zinc therapy was reported in AEP (10) and in a case of acquired zinc deficiency due to alcoholism and malnutrition (3). As also illustrated by the present case, zinc plays an unknown but important role in the pigmentation of hair, which remains to be studied further.

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Histiocytosis X with Unusual Skin Symptoms

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Abstract. A 4-year-old boy with skin symptoms resembling verruca plana juvenile was observed. The light- and electron-microscopic picture showed the typical features of histiocytosis X (Letterer-Siwe syndrome). Beside the skin manifestations some less dense areas in the skull

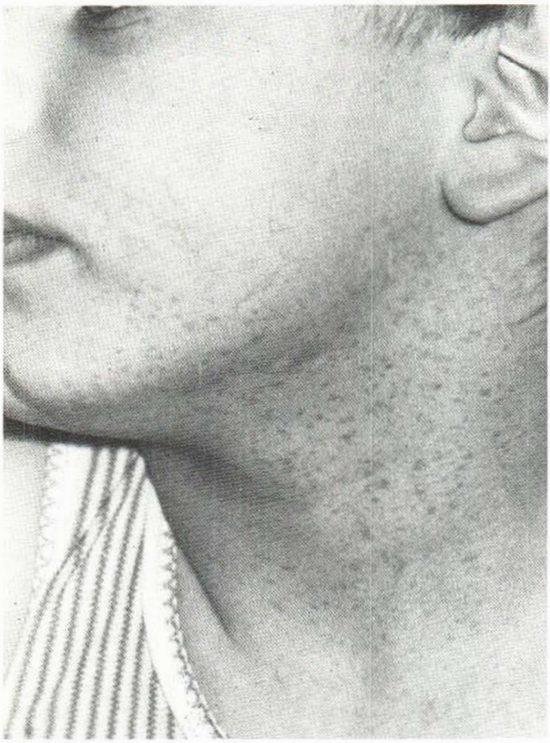

Fig. 1. Clinical picture.

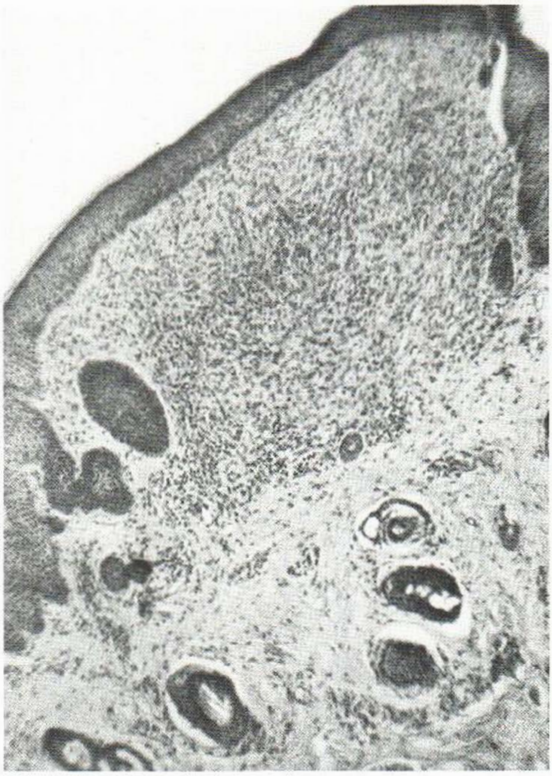

Fig. 2. Cellular infiltration on a well circumscribed area, HE, ×9.

bones were found by X-ray examination. Vinblastine and prednisolone treatment for one year resulted in complete remission.

Key words: Histiocytosis X; Letterer-Siwe syndrome; Unusual skin manifestation; Skin symptoms resembling verruca plana juvenile

The classical clinical picture of histiocytosis X, i.e. the Letterer-Siwe syndrome, is well known. It is caused by the proliferation of abnormal histiocytes (1,9), not only in the skin, but in the bones, lymph nodes and visceral organs, too (6). The latter lead to a fatal course if the patient is not correctly treated (3).

Histologically the disease is characterized by a multitude of histiocytes with an admixture of some lymphocytes and eosinophils (1, 9). The infiltrate of the skin is localized under the epidermis, which can be invaded by it. By electron microscopy it has been shown that a certain percentage of the histiocytes contain organelles characteristic of Langerhans' cells (1, 4, 8).

In spite of the morphological similarity there is some difference in the immuno- and enzyme-histochemical characteristics (12), in the uptake of OsZnJ/11/, and in the phagocytosing capacity of the Langerhans' cells and histiocytes (12). The latter cells belong to the MPS system (5, 12) and the disease is thought to be related to the lymphomas (10).

A patient with unusual skin symptoms, who was observed by us, is now described.

CASE REPORT

A boy, aged 4 years was sent to our clinic on 16 May 1979. His skin symptoms had appeared 2 years earlier, and were thought to be verruca plana juvenile.

On the lower part of his face, in the submandibular region, on the neck and palbebral margins, skin-coloured, brownish-red or yellowish, slightly elevated papules with a diameter of 2 mm were seen (Fig. 1).

The unusual colour of the lesions suggested some other disease, i.e. one with systemic involvement. In the biopsy material, in frozen section, no lipid deposition was found. In embedded and HE-stained sections there was a histiocytic proliferation in the uppermost part of the corium

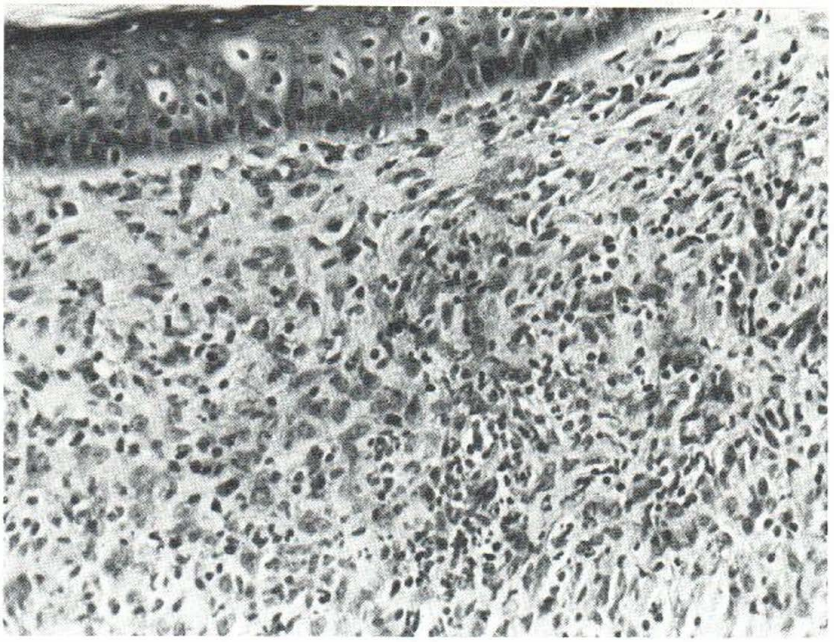

Fig. 3. The epidermis is flattened above the infiltrate, HE, ×60.

in a well circumscribed area (Fig. 2). The epidermis seemed to be pressed upward by the infiltrate, while the papillary layer became flat (Fig. 3). The nuclei of the histiocytes were large and pale, with nucleoli clearly visible, the cytoplasm slightly eosinophilic (Fig. 4). The cells were packed close together, and only a few of them entered the epidermis. The diagnosis of histiocytosis X was made and confirmed later by electron microscopy.

EM revealed Langerhans' cell organelles in some cells of the infiltrate, appearing as rod-shaped or tennis racket shaped organelles (Fig. 5). Strange forms were also seen: disintegrating rods giving rise apparently to free vesicles, formation of the vesicle on the rod, vesicle in the middle of the rod, etc. The inner layer and the periodicity of the Birbeck granules (2) were discernible. Lipid droplets occurred occasionally, while lysosomes were

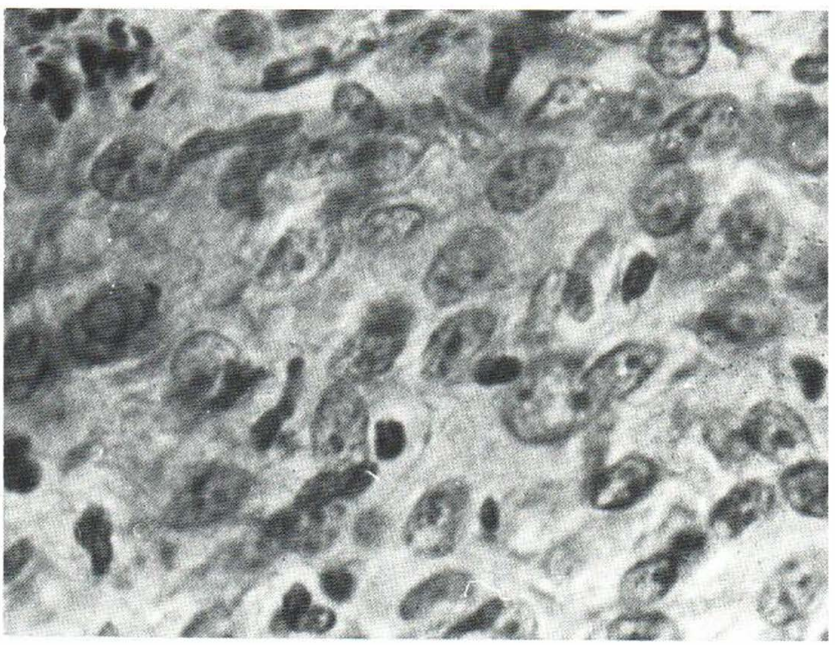

Fig. 4. Histiocytes with pale nucleus and prominent nucleoli, HE, ×240.

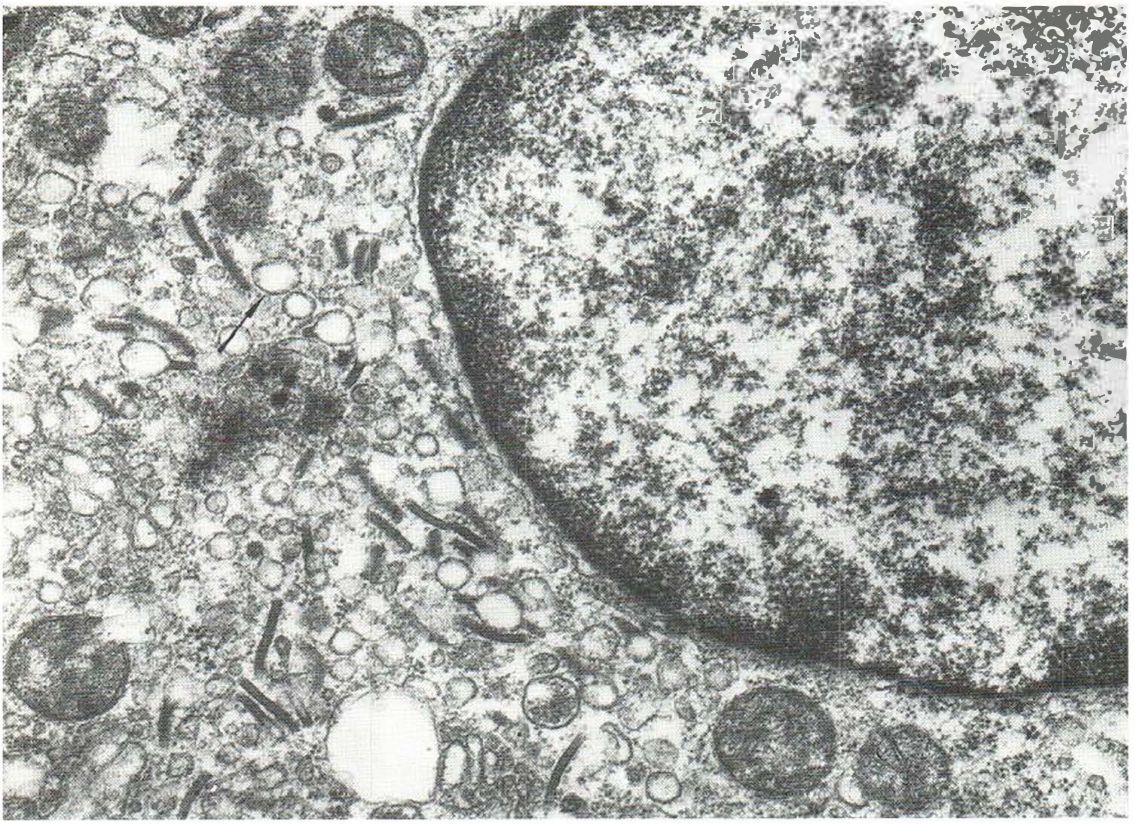

Fig. 5. Rod-shaped and tennis-racket shaped organelles with free vesicles (*arrow*) in a dermal histiocyte, ×18000.

regularly present. The other organelles were normal. The only striking picture was the folding of different membranous structures.

Physical and laboratory investigations failed to reveal any abnormalities. By skull X-ray some less dense areas in the os frontale and parietale were seen, but without definite signs of lysis.

Prednisolone (40–60 mg daily) and vinblastine (0.1 mg/kg bw once a week) was administered for half a year. At the end of this period the skull bone lesions disappeared, but the skin symptoms remained unchanged. In the next 6 months the same dose of prednisolone was given every second day, and vinblastine every second week. The patient became symptom-free; only a slight pigmentation was seen at the site of the lesions.

DISCUSSION

The skin symptoms of histiocytosis X usually resemble Darier's disease or seborrhoeic dermatitis. Scaling, crusting, or bleeding of the papules is common. In our case the skin lesions resembled verruca plana juvenile, and in some respects benign cephalic histiocytosis, which belongs to the self-healing histiocytoses (7). The onset time of the disease, the localization and variation in the skin symptoms, and the histological and EM picture speak against this diagnosis.

We should like to call attention to the fact that unusually localized and coloured lesions resembling verruca plana juvenile might represent a hitherto undescribed clinical symptom of histiocytosis X (Letterer-Siwe disease).

Notes: the electron microscopic investigation was carried out with a Jeol Jem 100B electron microscope at the Central Laboratory of the Medical University School, Debrecen.

The case was demonstrated on poster in Vienna at the VII SCUR Meeting, on 9–10 May 1980.

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Infectious Mononucleosis (Glandular Fever) Complicated by Cold Agglutinins, Cold Urticaria and Leg Ulceration

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Abstract. A 19-year-old female is described, whose glandular fever was complicated by cold agglutinins, cold urticaria and leg ulceration. This has not been described before, despite the well recognized occurrence of cold agglutinins.

Glandular Fever (Infectious Mononucleosis) is a common disease affecting young adults. It produces a benign febrile illness and is associated with numerous complications outside the bone marrow and reticulo-endothelial system. We report here a patient presenting with transient cutis marmorata, cold agglutinin antibodies, cold urticaria and leg ulceration.

CASE REPORT

A plump 19-year-old girl presented with a history of having had a sore throat 8 days earlier followed 2 days later by a faint rash all over her body. Three days after this she noticed 'purple lumps' on her legs. When first seen she had cutis marmorata involving the thighs and lower legs and some large bullae on both calves. She was given a course of Ampicillin and was admitted 3 days later when she was found to have cervical lymphadenopathy, a tonsillar slough, a maculo-papular eruption involving most of the body, cutis marmorata on her legs and irregular scabbed ulcers at the site of the bullae on both lower legs. The 'purple lumps' were seen to be urticarial wheals which occurred on exposure to the cold and which lasted in all for about 5 weeks; her leg ulcers had healed completely by 12 weeks.

Investigations

Haemoglobin 12.1, white cell count 6.8 (50% atypical mononuclear cells); Paul Bunnell positive, film displayed marked agglutination. Creatinine 51; SGOT 110; Proteins 76.1 g/l; cold agglutinins, positive; cryoglobulins, negative; throat swab—no pathogens; MSU, no cells or growth; ASO titre. 40 units/ml; smooth muscle antibodies +++. Rose-Waaler, 1.32; IgM 5.4 (0.5–1.6; IgE>1 100 (N>200). Cold agglutinins, negative one month later.

Skin biopsy showed acute ulceration with no evidence of vasculitis.

DISCUSSION

Glandular fever is frequently associated with cold agglutinins; indeed, Worledge & Dacie demonstrated a 50% incidence. However, our own laboratory experience is an approximately 1% agglutination as seen on routine film. Very rarely do symptoms occur. Cold agglutinins are a minor cause of cold urticaria, which itself is found in only 1% of urticarias (Champion et al., 1969). No biopsy evidence of vasculitis was found in the dermal vessels such as was found in cases of chronic cold urticaria by Eady et al. Leg ulceration has not apparently been reported previously as a complication of cold agglutination and glandular fever.

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