Pachyonychia Congenita Project

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We hope that making available the relevant information on Pachyonychia Congenita will be a means of furthering research to find effective therapies and a cure for PC.

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Hereditary Benign Intraepithelial Dyskeratosis

(Witkop-von Sallmann Syndrome)

The syndrome of hereditary benign intraepithelial dyskeratosis was described in a North Carolina triracial isolate (Caucasian-Negro-Indian) in 1960 by Witkop et al. (4) and by von Sallmann and Paton (2). The chief components are (*a*) plaques of the bulbar conjunctiva and (*b*) oral mucosal thickenings clinically similar to white folded hypertrophy (white sponge nevus of Cannon).

The syndrome is inherited as an autosomal dominant trait with a high degree of penetrance (4). Attempts to link this trait with several blood groups have met with negative results (1).

SYSTEMIC MANIFESTATIONS

Eyes. About the limbus, both nasally and temporally, there are foamy gelatinous plaques, more superficial than pterygia, on a hyperemic bulbar conjuctiva (Fig. 64-1). The eye lesion is usually noted within the first year of life (2).

The dyskeratotic process may involve the cornea, producing blindness from shedding and resultant vascularization of this structure. Photophobia, especially in children, is common.

Oral manifestations. The oral mucosal thickenings are asymptomatic. They appear as soft white folds and plaques, resembling the lesion described by Cannon in 1935 as white sponge nevus (7, 8). Though the thickenings appear at birth, they are mild, increasing in severity to about fifteen years of age. There does not appear to be a tendency for the plaques to undergo malignant degeneration (Fig. 64-2).

DIFFERENTIAL DIAGNOSIS

The white sponge nevus and the oral lesions of *pachyonychia congenita* bear a distinct clinical resemblance to those of hereditary benign intraepithelial dyskeratosis.

Figure 64-1. *Hereditary benign intraepithelial dyskeratosis.* Superficial gelatinous plaques on hyperemic bulbar conjunctiva involving limbus and cornea.

ıted with strabismus and amblyopia has escribed (2).

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enetic studies may rarely reveal chromo- anomalies.

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Pachyonychia Congenita Syndromes

(Jadassohn-Lewandowski Syndrome and Jackson-Lawler Syndrome)

Pachyonychia congenita is genetically heterogeneous, two distinct syndromes being subsumed under the term. Although the syndromes exhibit some similarities, their differences are never observed within the same pedigree.

JADASSOHN-LEWANDOWSKI SYNDROME

In 1906, Jadassohn and Lewandowski (10) described the syndrome of (*a*) pachyonychia congenita, (*b*) palmoplantar keratosis and hyperhidrosis, (*c*) follicular keratosis, and (*d*) oral leukokeratosis. The syndrome follows an autosomal dominant mode of transmission.

Skin and skin appendages. In most cases, at birth or soon thereafter, the finger- and toenails become thickened, tubular, and hard, the undersurface being filled with a horny, yellowish-brown material. This substance causes the nail to project upward from the nailbed at the free edge. Commonly, the nails are lost, with similar but more severe involvement appearing on regrowth. Inflammation at the sides of the nails is frequent (1) (Fig. 115-1*A*).

Hyperhidrosis of the palms and soles nearly always occurs, the rest of the skin being quite dry and often described as "mildly ichthyotic."

Palmar and plantar hyperkeratoses are noted in 40 to 65 percent of the cases during the first few years of life. During warm weather, bullae appear on the feet, especially on the plantar surface of the toes and heels and along the sides. They burst, become infected, and are very painful, often making walking extremely difficult (6) (Fig. 115-1*B*).

During the first few years of life, pinhead-sized follicular papules appear over the elbows, knees, popliteal areas, and buttocks in over 50 percent of the cases (13). In the center of each papule, a horny plug is seen. Verrucous lesions may also occur in the same areas (6). The skin is thickened, owing to acanthosis and parakeratosis, especially about the pilosebaceous apparatus. The follicles and sweat pores are dilated and plugged with imperfectly cornified and partly degenerated horny material. The hair is frequently noted to be dry, and alopecia has been reported (11, 13).

Ears, nose, and throat. Hoarse voice and thickening of the posterior commissure of the larynx have been noted (8).

Other manifestations. Mental retardation has also been documented (12).

Oral manifestations. The dorsum of the tongue is thickened, presenting a white or grayish-white appearance (7) (Fig. 115-2). Less commonly involved is the buccal mucosa at the interdental line. Oral aphthae are frequent (1, 16).

The oral mucosa is thickened by a uniform acanthosis. There is marked intracellular vacuo-

A

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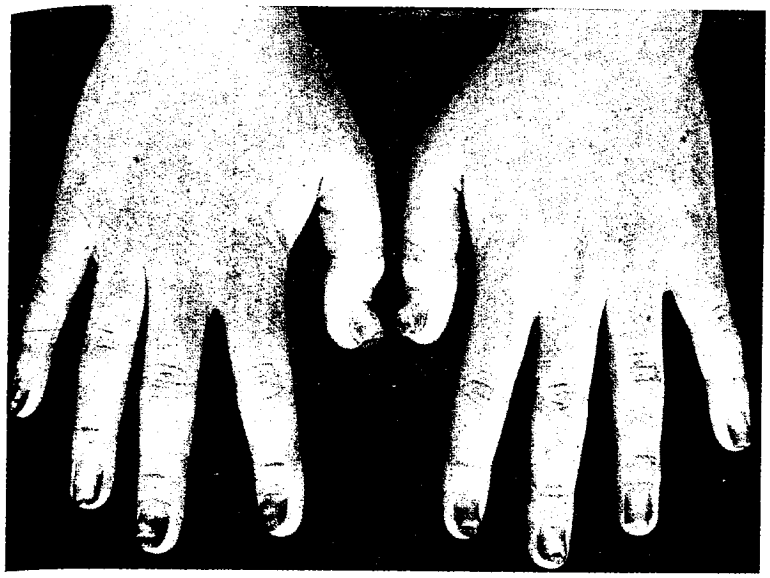

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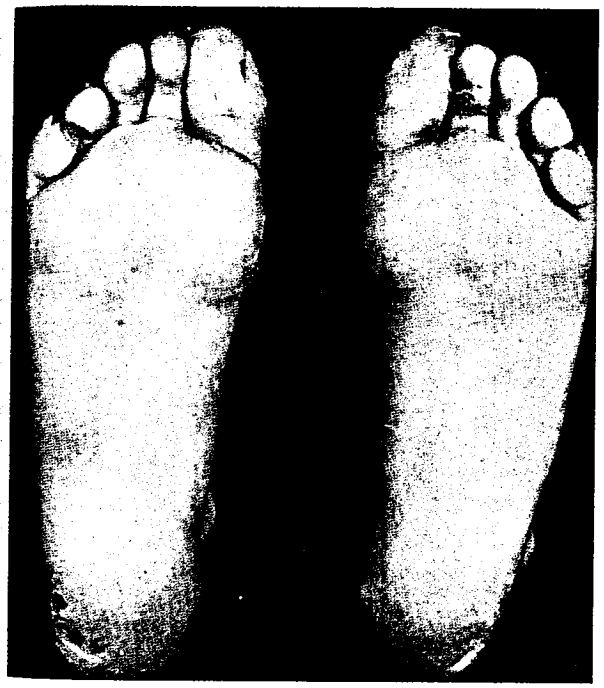

B

Figure 115-1. (*A*). *Pachyonychia congenita.* Note thickening and elevation of fingernails at free edge of thirteen-year-old female. This change is noted in types I and II. (*B*). Note ruptured blisters of toes and heels. Often there is severe hyperkeratosis of soles. (*From A. D. M. Jackson and Lawler,* Ann. Eugen. **16:**141, 1951.)

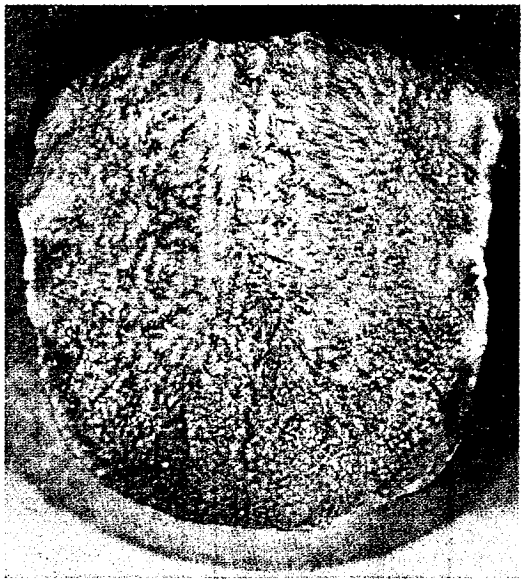

Figure 115-2. Thickening of oral mucosa, especially that of tongue and buccal mucosa, occurs only in type II.

lization. The intercellular bridges in the stratum spinosum are absent. Parakeratosis is marked. No Schiff-positive material is seen in the epithelium. The microscopic picture greatly resembles that seen in white sponge nevus.

Touraine (18) suggested that the incidence of scrotal tongue is high, but we have not been able to support this contention.

JACKSON-LAWLER SYNDROME

In 1951-1952, Jackson and Lawler (9) described a syndrome which has some of the same features observed in the Jadassohn-Lewandowski syndrome, such as (*a*) pachyonychia congenita, (*b*) palmoplantar hyperkeratosis and hyperhidrosis, and (*c*) follicular keratosis. However, (*d*) oral leukokeratosis is never observed. In addition, patients with the Jackson-Lawler syndrome have (*e*) large cutaneous epidermoid cysts and (*f*) natal teeth. Other families have been reported by a number of authors (3, 13, 17, 19-21). Members of the same family were reported by Brain (4), Shrank (16), Besser (2), and possibly by Murray (14). The syndrome follows an autosomal dominant mode of transmission.

Skin and skin appendages. The findings are identical to those observed in the Jadassohn-Lewandowski syndrome. In addition, large epidermoid cysts, especially of the head, neck, and upper chest regions, appear around puberty (2, 5, 9, 13, 16, 17, 19, 20, 21).

Eyes. Corneal dystrophy has been reported by several authors (5, 9, 17).

Ears, nose, and throat. Hoarse voice has been described (9, 13).

Oral manifestations. Natal teeth are poorly calcified (3, 9, 14-17, 19, 20).

DIFFERENTIAL DIAGNOSIS

The nail changes are distinctive, while the oral leukokeratosis is nonspecific, being seen in many disorders, such as *dyskeratosis congenita, hereditary benign intraepithelial dyskeratosis,* and white sponge nevus (7). Isolated natal teeth occur once in 2,000 to 3,000 newborns but may be seen with increased frequency in *Ellis-van Creveld syndrome,* in *Hallermann-Streiff syndrome,* and in cleft lip-palate.

LABORATORY AIDS

None is known.

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