INDIAN J DERMATOL VENEREOL LEPR VOL. 49, NO. 5, 1983

A SURVEY FOR KERATOSIS PUNCTATA OF THE PALMAR CREASES AMONG INDIANS

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Summary

To find out the incidence of keratosis punctata of the palmar creases among Indians, 700 consecutive patients and their attendants were surveyed for typical lesions. Fifteen patients were discovered to have characteristic keratotic masses or pits limited to the flexural creases of their palms and fingers. The lesions in each case were asymptomatic. Histologically, they consisted of concentric masses of keratin formed in crater-like depressions of the epidermis. Serial sections showed that the epidermis was intact throughout and special stains did not reveal any dermal components in the keratin masses.

KEY WORDS: Keratosis punctata: Palmar creases

Introduction

Our interest in keratosis punctata of the palmar creases (KPPC) was aroused when one of us (JSP) came across a classical case during a routine check up of industrial workers for skin diseases. This condition has been considered to be rare[1] because of paucity of the reported cases, but some workers feel that it is not so rare as believed[2]. From India, only a single recent report[3] has described 5 cases.

We undertook a brief survey for this condition in our OPD covering 700 patients and their attendants and found 15 individuals having characteristic lesions.

Materials and Methods

All patients attending the Skin OPD for various dermatologic ailments and their attendants were examined for the presence of keratotic papules or pits on the flexural creases of their palms and fingers. Patients found having lesion(s) were subjected to detailed clinical history especially family history, symptoms, duration of the lesions and associated diseases if any. Biopsy was taken in five cases for histopathological study. One specimen was subjected to serial sectioning and some of these sections were stained with Verhoeff van Gieson's, Masson's trichrome and alcian blue stains.

Results

Fifteen individuals (13 males and 2 females) ranging in age between 16 and 55 years were found to have keratotic papules and pits characteristic of KPPC (Fig. 1 & 2). In 11, the lesions were quite prominent, while in four patients the lesions were very few and small. Four patients had lesions on their soles as well and two other patients in addition had keratotic

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Received for publication on 3—8—1983

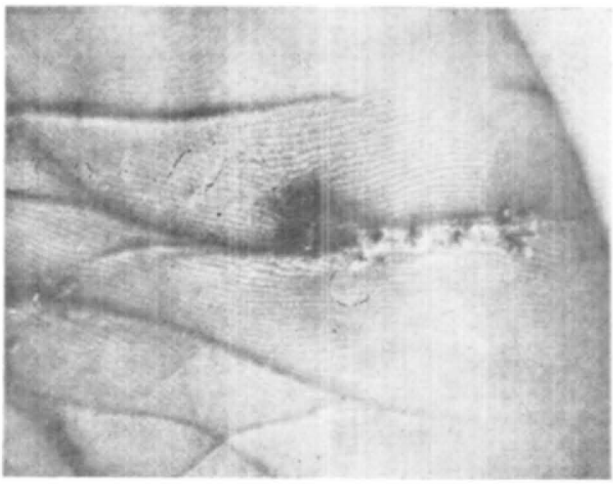

Fig. 1
Keratotic papules on the palmar creases.

papules on their palms outside the creases. Lesions in all the patients were asymptomatic and therefore discovered only incidentally. However, in seven patients the duration of the lesions could be established and ranged between 2 and 10 years. Five patients had actually come to the hospital for leprosy, 2 for contact dermatitis, one each for premature grey hairs, lichenoid eruptions, chondritis nodularis and ichthyosis vulgaris with diffuse keratoderma. None of the patients was aware of similar lesions in any of their family members.

Histologically, the stratum corneum showed marked uniform thickening, while the rest of the epidermis was essentially normal except that at some places, it was thrown into deep depressions filled with concentric masses of keratin (Fig. 3). The dermis showed no specific findings. In some areas, the concentric mass of keratin was missing (apparently shed off) leaving behind a thick layer of keratin on the epidermal surface (Fig. 4) looking like a crater. Serial sections and special stains showed that the concentric masses were made up of keratin only, there being no evidence of penetration of the epidermis or transepidermal extrusion of dermal components.

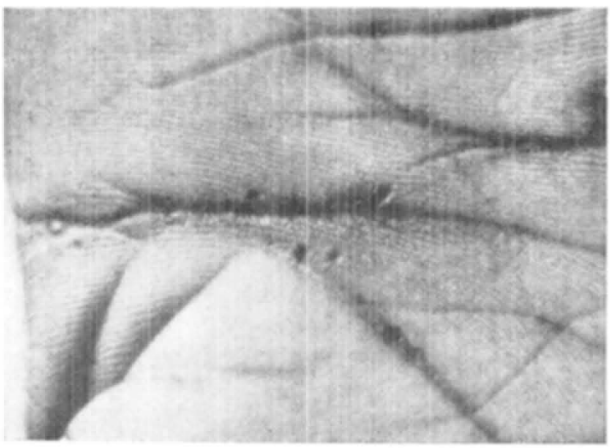

Fig. 2
Keratotic pits on the palmar creases.

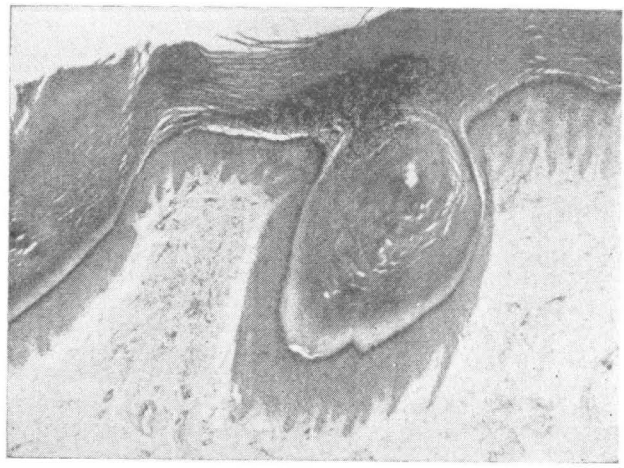

Fig. 3
An epidermal depression in KPPC containing the keratin ball.

Discussion

The earliest cases of KPPC were described almost simultaneously by Phillips[1] and Arnold[4]. Although both the authors noticed the characteristic limitation of the keratotic papules to the palmar creases only, neither of them considered it as a distinct entity. Phillips[1] did not distinguish his case from other types of keratoderma punctata, while Arnold[4] and later Fischer et al[5] considered their cases as a variant of Kyrle's disease. Unlike Kyrle's disease however, in neither of these cases the keratin plug was observed to penetrate into the dermis.

The characteristic pathologic change in KPPC seems simply to consist of a depression in the epidermis, with the result that the keratin formed from this part of the epidermis tends to be laid in concentric layers to form a keratinous ball. This ball in the early stages, lies under a continuous layer of stratum corneum, but as more and more layers are added to this keratinous ball, it protrudes out of the depression and is ultimately thrown out to leave behind a crater-like pit. This process in some respects, resembles that of comedo formation except that it is not associated with the pilosebaceous follicle or even with the sweat glands. The other histopathologic changes such a parakeratosis, thinning of the epidermis, proliferation of the epidermal rete ridges

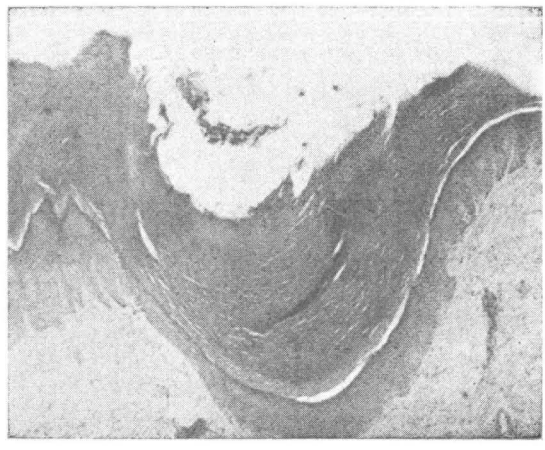

Fig. 4
An epidermal depression in KPPC from where the keratin ball has been shed off.

described in some of the reports[2,4,5] have not been seen in all the cases and therefore, they are probably not important.

The reason for limitation of the lesions to the flexural creases is not known. It is possible that a crease provides a greater opportunity for the epidermis to be thrown into a depression into which the keratin balls can form. This tendency may be inherited because there has been a marked difference in the racial susceptibility between negroes and whites, but familial cases have been recorded in only two reports[3,6] though as Weiss and Rasmussen[2] have suggested, positive cases in the family may remain undetected because of the asymptomatic and mild nature of the disease.

The disease however is not as uncommon as generally believed. The present survey indicates an incidence of 2.1% among the Indians compared to 3.1% among the American blacks[2]. Scott, Costello & Simuangco[7], however, discovered only 3 cases during a survey of 6100 dermatologic cases. Thankappan et al[3] discovered five cases in six months which means that one has to be aware of this condition to discover these patients.

Acknowledgement

We are thankful to Dr. (Mrs.) Indira Nath, Assistant Professor, Department of Pathology, A.I.I.M.S. for the histopathological studies.

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