

Chronic Truncal Plaques and Palmoplantar Keratotic Lesions in an Elderly Man

Case Report

A 70-year-old gentleman with a significant past history of using traditional medication presented to our clinic with multiple dysplastic lesions of varying severity on the covered areas of his chest and back and keratotic lesions on his palms and soles for 2 years. We present 3 clinical photographs and discuss the diagnosis of his condition.

Clinical Description

The patient complained of multiple non-healing sores on his chest and back for 2 years. He had been taking traditional medications for more than 30 years for rheumatism and asthma. He had sought treatment from other clinics previously, and was treated with cryotherapy and excision of some of the chest lesions. These had unfortunately recurred. Clinically, he had numerous erythematous plaques with adherent thick scales and moist papillomatous base on the chest (arrowheads in Fig. 1) and back (Fig. 2). His palms (arrowheads in Fig. 3) and soles had multiple corn-like keratotic lesions. The regional lymph nodes on the neck, axilla and groin were not enlarged. A biopsy was performed from the large keratotic plaque on the back (arrowhead in Fig.2).

What is your diagnosis?

- a) Actinic keratosis with palmoplantar viral warts
- b) Actinic keratosis with palmoplantar callosity
- c) Seborrhoeic keratosis with palmoplantar viral warts
- d) Cutaneous dysplastic lesions with palmoplantar keratosis
- e) Psoriasis with palmoplantar callosities

Answer: d

Discussion

Actinic keratosis consists of discrete patches of erythema and scaling occurring on chronically sunlight-exposed areas in middle-aged and elderly individuals. They are usually asymptomatic but may occasionally be painful or itchy. They represent focal areas of abnormal keratinocyte proliferation and differentiation that carry a low risk of progression to invasive squamous cell carcinoma. Seborrhoeic keratosis presents as multiple pigmented macules, papules or plaques with a velvety surface and “stuck on” appearance. They are commonly found in older individuals and are benign.

Callosities consist of thickened skin at areas of friction or pressure on the palms and soles. Viral warts are



Fig. 1. Multiple erythematous plaques with overlying scales on the chest indicated by arrowheads.

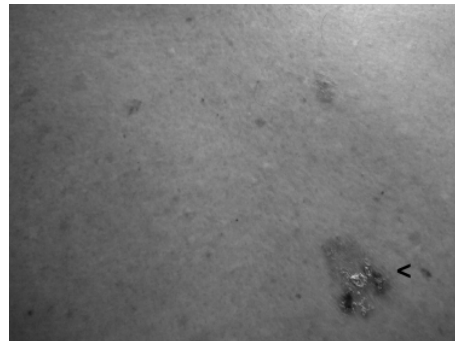


Fig. 2. Multiple erythematous plaques with overlying scales on the back. The largest lesion from where a punch biopsy was taken is labelled with an arrowhead.

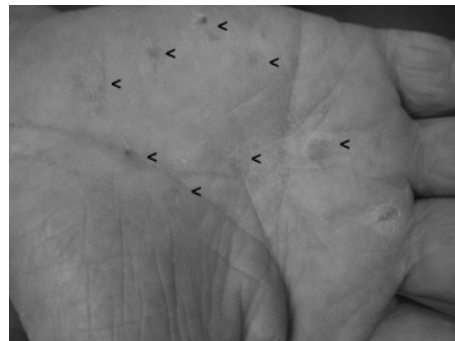


Fig. 3. Multiple hyperkeratotic papules on the right palm indicated by arrowheads.

focal proliferation of human papilloma virus infected keratinocytes. They present clinically as hyperkeratotic, exophytic and dome shaped papules and nodules with punctate black dots representing thrombosed capillaries.

For this patient, the erythematous scaly plaques occurred at sun-protected areas of the body, while the palmoplantar keratoses are randomly distributed and are not typical of viral warts. Given the history of chronic traditional medication consumption, one should strongly suspect chronic arsenicism with arsenic induced cutaneous malignancy and palmoplantar arsenical keratoses. The skin biopsy

from a plaque on the patient's back showed squamous cell carcinoma, which is consistent with the above diagnosis.

Arsenic occurs in the form of the elemental metal, inorganic (trivalent and pentavalent), or organic arsenic. Inorganic trivalent arsenic is the most common form of arsenic that humans are exposed to. Historically, medicinal trivalent inorganic arsenic is contained in Fowler's solution (potassium arsenite), Asiatic pills (arsenic trioxide mixed with opium or pepper), Pearson's solution (sodium arsenite) and Donovan's solution (arsenic triiodide). These were used to treat a wide variety of ailments ranging from rheumatism, malaria, tuberculosis, diabetes and psoriasis. Organic arsenic in the form of Salvarsan (arsphenamine) was used to treat syphilis before penicillin was discovered. In Asia, arsenic is commonly found in traditional medicaments used for a variety of ailments.

Arsenic sulfides occur in large quantities in ores and are leached from these minerals into water, soil and vegetation. With some methods of smelting, large quantities of arsenic fumes escape, with precipitation recovered as arsenic trioxide (white arsenic) in drinking water. Arsenic is also used in the manufacturing of pesticides, wood preservatives, electroplating and semiconductor fabrication. Chronic exposure to arsenic from medicaments, occupation and the environment leads to chronic arsenicism.¹

Cutaneous signs of chronic arsenicism include hyperpigmentation of the axilla, groin, nipples, palms, soles and pressure points with small areas of depigmentation resembling "raindrops on a dusty road", diffuse alopecia and thromboangitis leading to lower limb necrosis (black foot disease). Extracutaneous manifestations of chronic arsenicism include nasal septum perforation, peripheral neuropathy, bone marrow hypoplasia and gastrointestinal disturbance (liver cirrhosis, diarrhoea and malabsorption).¹

Arsenic is a carcinogen, although the exact mechanism of tumour promotion is unknown. Premalignant arsenical keratosis of the palms and soles, multiple non-melanoma skin cancers (Bowen's disease, squamous cell carcinoma, basal cell carcinoma) and extracutaneous visceral malignancies (bladder, liver and lung) are all associated with

chronic arsenicism.¹ The latent periods for the development of arsenical keratoses, Bowen's disease, and squamous cell carcinoma were reported to be 28, 39 and 41 years, respectively.² Long-term follow-up is therefore necessary for cutaneous and visceral tumour detection. Chelation therapy is not useful in chronic arsenicism. Therapeutic options for managing the cutaneous malignancies associated with chronic arsenicism follow standard guidelines for these malignancies.³⁻⁵ Oral retinoids can also be used as chemotherapy for Bowen's disease and arsenical keratosis and for the chemoprevention of arsenic induced cutaneous neoplasms.⁶

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