Aquagenic syringeal acrokeratoderma

Sir,

We report a case of a 35-year-old female patient who presented to dermatology clinic with complaints of sensation of tightness and pebbled appearance of both palms, 10–15 min after soaking hands in water. These changes were reversible and used to disappear in 15–20 min. She noticed similar changes over both feet as well. The patient did not have any significant medical history. Rest of cutaneous, vasomotor, and systemic examination was not contributory. For examination purpose, the patient was asked to soak hands in tap water. Her hands were normal at baseline and after 10 min, they were edematous and appeared to be granular on palpation due to prominent eccrine sweat gland ducts [Figure 1]. Her sweat chloride test was negative. Dermatoscopy was also done from volar aspect of left middle finger, which revealed dilated sweat ducts [Figure 2]. Histopathological examination (hematoxylin and eosin staining) from lesion demonstrated compact orthokeratosis, hypergranulosis, and dilatation of intraepidermal eccrine ducts. Dermis showed dilated blood vessels and numerous eccrine glands [Figure 3]. On the basis of clinical, dermatoscopic, and histopathologic examination, a diagnosis of aquagenic acrosyringeal acrokeratoderma was concluded. The patient was counseled about the benign nature of condition and she was treated with topical aluminum chloride hexahydrate 20% with good response.

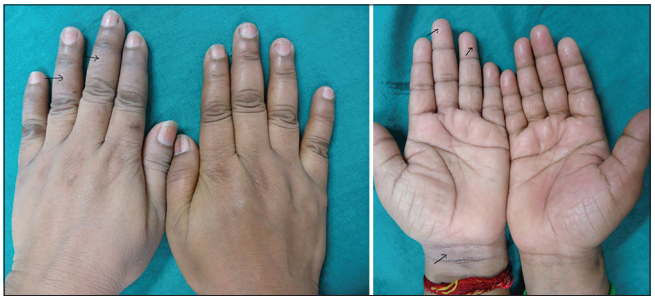

Figure 1: Clinical photograph of both hands with left hand immersed in water for 10 min, which appears edematous and granular as compared with right. There is pebbled appearance of left hand due to multiple skin- to white-colored papules

Aquagenic acrosyringeal acrokeratoderma, also known as transient reactive papulotransculent keratoderma, is a rare disorder usually affecting palms and/or soles.[1,2] It was first described by English and McCollough in 1996 in two sisters.[1] It predominantly affects middle-aged women, with age of onset ranging from 9 to 33 years (mean age 21 years).[3] The condition is postulated to have a genetic basis, with both autosomal dominant and recessive pattern of inheritance.[1-3] It is reported to be associated with palmar/plantar hyperhidrosis, palmar erythema, allergic rhinitis, bronchial asthma, cystic fibrosis, and malignant melanoma.[1-3] The etiopathogenesis of aquagenic acrosyringeal acrokeratoderma is not well understood, with multiple hypothesis postulating increased salt and water content or barrier function abnormalities leading to transitory anatomical and functional changes in stratum corneum and eccrine ducts and ostium.[1-4] Its association with cystic

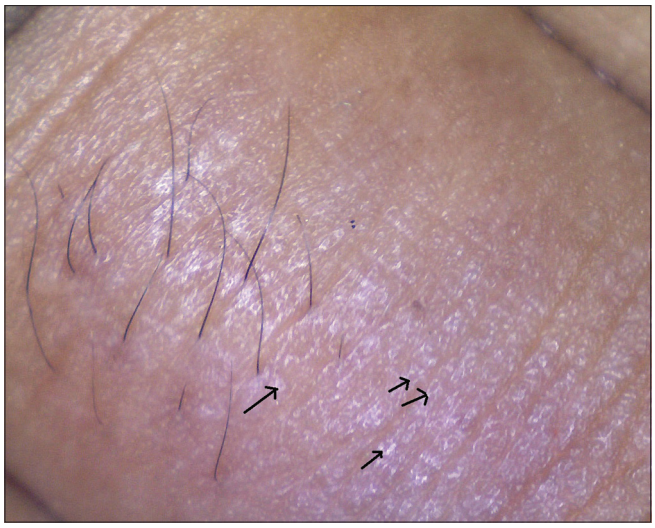

Figure 2: Dermatoscopic photograph showing dilated and enlarged eccrine duct openings. (×150)

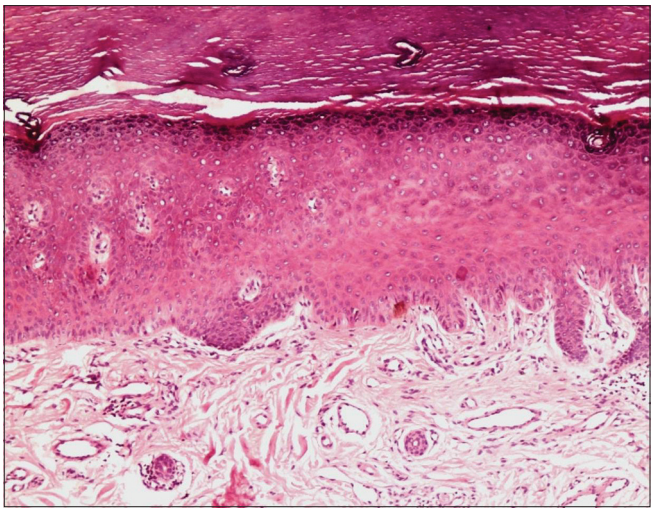

Figure 3: Histopathological examination (hematoxylin and eosin staining) showing compact orthokeratosis, hypergranulosis, and dilatation of intraepidermal eccrine ducts. Dermis shows dilated blood vessels and numerous eccrine glands. (H and E, ×100)

fibrosis and patients with cyclooxygenase-2 (COX-2) inhibitor medications (rofecoxib, celecoxib, and aspirin) suggests increased salt content in stratum corneum leading to these changes. The proposed mechanism is COX-2 inhibition in epidermal cells leads to increased sodium reabsorption and consequently increase in sodium content of epidermal cells.[5] A case report of aquagenic syringeal acrokeratoderma after withdrawal of spironolactone has recently been published.[5] Abnormal regulation of transmembrane channel aquaporin-3 and weakness in sweat ducts is also considered to play a role in its pathogenesis. Excessive exposure to detergent affecting the barrier function is reported to exacerbate aquagenic acrosyringeal acrokeratoderma in a case.[2,3]

Affected individuals report a sensation of tightness, tingling, or pruritus on immersion of hands and feet in water. Clinically, it is characterized by the appearance of subtle white- to skin-colored papules measuring 1–2 mm over palms and soles after soaking them in water for 10–15 min giving a pebbled appearance. The common presentation is the "hand-in-the-bucket sign," in which patients arrive with their hands in a bucket of water to the physician's office for demonstration of their lesions and can be regarded as a pathognomonic sign.[6] The condition is usually symmetrical and affects volar aspect of palms. Atypical cases, affecting males, over dorsal skin and form restricted exclusively to feet and localized lesions have also been reported.[3,4] These changes are observed irrespective of the water temperature, occurring at variable temperature; normal, hot, or cold. The histological features associated with aquagenic acrosyringeal acrokeratoderma are orthohyperkeratosis and dilatation and tortuosity of eccrine ducts and ostia.[4,6] In another case, additional feature in the form of lymphocytic infiltrate surrounding eccrine sweat units have also been described.[4] Aquagenic acrosyringeal acrokeratoderma has a chronic and persistent course. The various treatment modalities including aluminum chloride hexahydrate 20%, 12% aluminum lactate cream 3%, 5% salicyclic ointment, petrolatum-based creams, and botulinum toxin injections have been used with variable success.[1,3,4] The long-term remission is reported with botulinum toxin injections; lasting up to 5 months. Thus hereby we report the first case of aquagenic acrosyringeal acrokeratoderma from India with histological and dermatoscopic features.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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