Case Report

Flegel's disease (FD) or hyperkeratosis lenticularis perstans (HLP): A case report.

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Abstract

Flegel's disease (FD), is a rare dermatosis and benign cornification disorder. Four cases of Flegel's disease were reported for the first time in Bangladesh. Cases presented with symmetrically distributed erythematous or brownish hyperkeratotic papules and plaques on leg, upper arm and upper back. All cases had familial association. Clinical diagnosis of FD was confirmed by histopathological examination. Histopathological findings showed compact hyperkeratosis, orthokeratosis, thinning of stratum mulpighii and band like lymphocytic infiltration in the dermis. This rare dermatosis requires clinical and histopathological correlation to diagnose at an early stage and to avoid under-reporting.

Key words: Flegel disease, Hyperkeratosis lenticularis perstans.

Introduction:

Hyperkeratosis lenticularis perstans (HLP) or Flegel's disease(FD), is a rare dermatosis and benign cornification disorder first described in 1958 by Flegel.[1] FD is characterized by asymptomatic small erythematous or brownish hyperkeratotic papules from 1 to 5 mm in size that is generally distributed symmetrically on the limbs, particularly the dorsal feet and lower part of the legs. [1-2] FD is more commonly reported to occur in women and is inherited as an autosomal dominant condition, although sporadic cases were also reported.[3] FD is considered a rare disorder; no data exist on the prevalence of the disease. To our knowledge, no documented case was reported in Bangladesh before. However, four cases of this rare disease were reported for the first time in Bangladesh.

Case reports:

Case 1

A 36-year-old woman presented to the Dermatology outdoor of BSMMU with multiple erythematous mildly pruritic hyperkeratotic papules and plaques on both legs with hyperpigmented border for 16 years. Skin lesions have progressed at a very slow rate. Initially, lesions were yellowish, discrete, hyperkeratotic papules involving the middle of the leg. In course of time it became larger, fused as plaques and extended almost the whole anterior aspect of leg. Papules and plaques were bilaterally symmetrically distributed. She has no history of excessive sun exposure, trauma, atopic or systemic diseases. She was previously treated with several medications, including topical corticosteroid and emollients, but there was no satisfactory response. On different occasions clinically she was diagnosed as a case of hypertrophic lichen planus, prurigo nodularis and lichen amyloidosis. She gave no history of consanguinity of marriage. She has two daughters and one son. Only one of her daughters had developed the same type of skin disease. On

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examination, there were numerous red-brown hyperkeratotic papules 1-5mm in size with discrete irregular margins on extensor aspects of both legs, on removing the keratotic scales from a lesion, a non-exudative erythematous base was revealed (i.e., "cornflake sign") with multiple bleeding points. There was no koebnerization, Wickham's striae or follicular involvement. Mucous membranes, nails and hair follicles were intact. The clinical appearance of the skin eruption was typical of Flegel's disease.

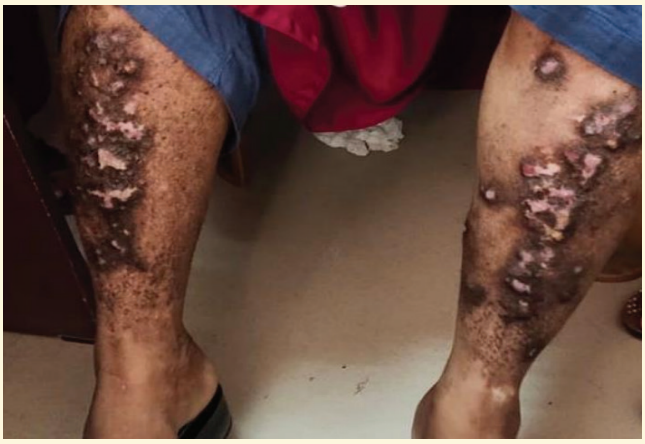

Figure 1 case 1: Multiple hyperkeratotic papules & plaque

Case 2

A 20-year-old woman, daughter of case one presented with multiple moderately pruritic, hyperkeratotic, hyperpigmented, bilaterally symmetrical discrete papules on both legs for 6 years. Routine laboratory examinations reveal no abnormality. She is otherwise in good health.

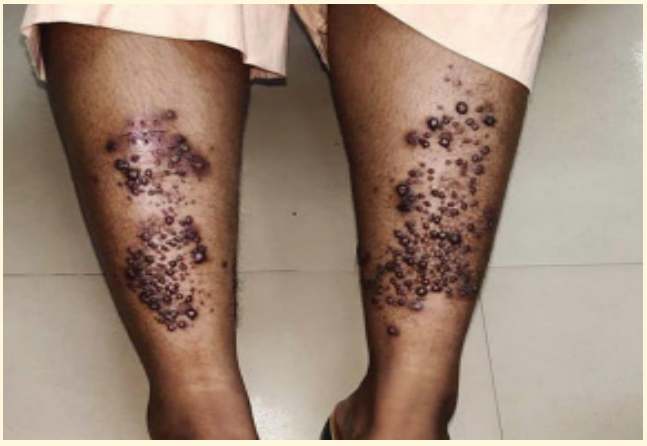

Figure 2 case 2: Multiple hyperkeratotic papules & plaque

Case 3:

A 13-year-old female presented with mildly pruritic erythematous hyperkeratotic papule in the anterior leg, dorsum of feet, upper arm and upper back for 3 years. The patient was in good health. Laboratory examinations were normal. One of her sisters is affected with a similar skin lesion.

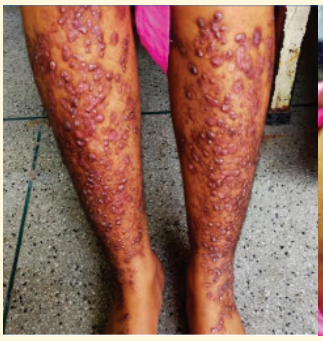

Figure 3 Case 3

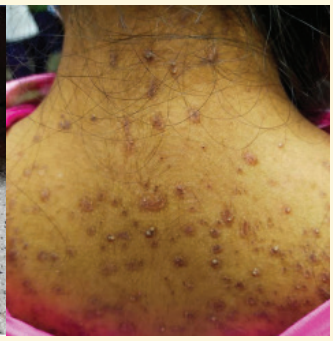

Figure 4 Case 3

Case 4:

A 10-year- old female (Sister of case 3) presented with moderately pruritic erythematous hyperkeratotic papule in the anterior leg, dorsum of feet, upper arm and upper back for 4 years. On examination, erythematous base revealed on removing the keratotic lesion. Koebner phenomenon was positive. Routine laboratory tests were all normal.

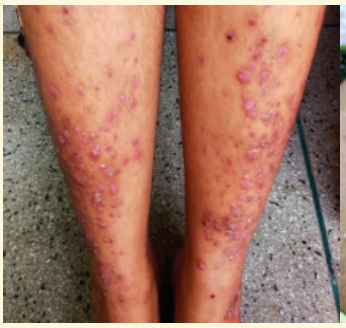

Figure 5 Case 4

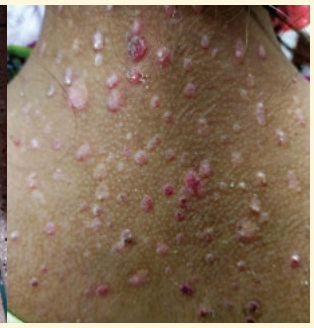

Figure 6 Case 4

Table: Case list

Patient no.	Age of onset	Duration (years)	Site	Symptoms
Case-1 (mother)	20	16	Anterior leg, dorsum of feet	Mild pruritus
Case-2 (daughter)	14	6	Anterior leg, dorsum of feet	Moderate pruritus
Case-3 (sister)	13	3	Anterior leg, dorsum of feet, upper arm, upper back	Mild pruritus
Case-4 (sister)	10	4	Anterior leg, dorsum of feet, upper arm, upper back	Moderate pruritus (Koebner phenomenon positive)

Basic investigations of all four cases including complete blood count, blood sugar, ESR, thyroid, renal and liver function tests were all normal. White structure-less areas on the surface were the dermoscopic findings in all patients. Histopathological examination of lesional skin biopsy showed compact hyperkeratosis, orthokeratosis, thinning of stratum mulpighii and granular layer, atrophy of epidermis, band like lymphocytic infiltration in the dermis and dilated dermal vessels. Histological features are compatible with the clinical diagnosis of Flegel's disease (2,3,4).

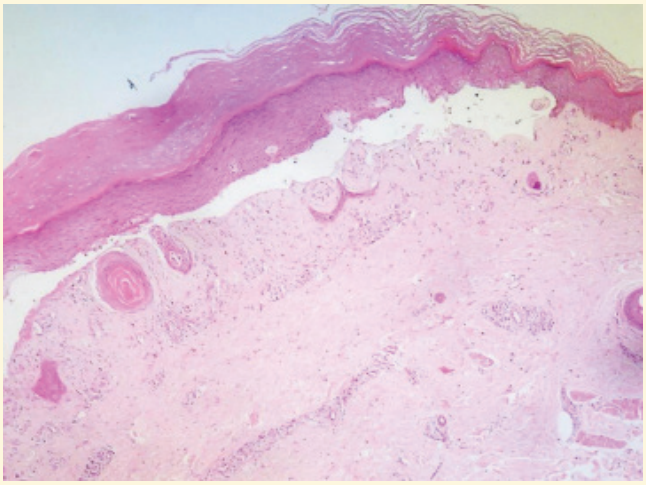

Figure 7: Histopathology of FD in (4x magnification) showing compact hyperkeratosis, orthokeratosis, thinning of stratum mulpighii and band like lymphocytic infiltration in the dermis

Discussion:

Flegel disease is presented as a chronic eruption of numerous symmetric hyperkeratotic papules, located primarily on the dorsal feet and lower legs. Rarely it can present in the trunk, buttock,upper extremities, neck (found in our case), palm & sole (3,4). FD typically manifests in the fourth to the fifth decade of life, however has been reported in individuals as early as 13 years of age.[4] In our context, all four cases have early presentation in their second decade, as early as 10 years of age. Interestingly all cases have a familial association which supports the autosomal dominant inheritance pattern of FD.[5] Although most cases reported worldwide were sporadic. Pathogenesis of FD is still not well established, most discussed findings are the qualitative and quantitative alterations in membrane coating granules (MCGs); also known as (lamellar granules, odland bodies) in the epidermis. Lamellar granules are thought to have a role in the formation of epidermal permeability and their absence/reduction results in reduced desquamation of stratum corneum and in retention hyperkeratosis.[6-7] No culprit gene or specific triggering factors have been identified to date. FD has been reported to be associated with adult-onset diabetes mellitus, hyperthyroidism and hyperaldosteronism.[7] Though in our cases, no systemic disease association was evident. The clinical features of FD are not distinctive. Clinically it resembles hypertrophic lichen planus, prurigo nodularis, keratotic diseases like kyrle's disease, stucco keratosis, disseminated superficialis actinic porokeratosis etc. [7-8] Therefore, histopathological confirmation is mandatory to exclude other keratotic diseases.[9] Treatment of FD is challenging and there is no standard therapy exist.[10] Cases have been reported with variable results using topical corticosteroids, topical 5-FU, topical and systemic retinoids, vitamin D3 synthetics, PUVA and ablative treatment including (local excision, curettage, cryotherapy, CO2 laser, electrocoagulation). [7,9,11-12] We have suggested following treatment protocol, cryotherapy for mother-daughter case, topical retinoid-calcipotriol combination and systemic retinoid for two sisters. The outcome of treatment is yet to be determined.

From our experience, FD is an under-reported disease mostly because of its asymptomatic clinical manifestation and clinical resemblance to other diseases, which takes a longer time to diagnose until

skin biopsy is done. Therefore, we assume that the actual prevalence of disease would be much higher. Also, as it is mostly an aesthetic concern, female patients are more prone to seek medical advice and get their skin biopsy done compared to male patients. So, there could be a bias in reporting male female-ratio. The rarity of the disease and the chance of under-reporting prompted us to present this case report.

Conclusion:

FD is a rare disease. But with the combination of proper clinical findings and histopathology, we can diagnose the disease during the early phase of manifestation, which can provide us with better treatment outcomes and patient satisfaction.

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