Galli-Galli Disease Presenting as a Lentigo-like Eruption: A Further Clinical Feature in the Wide Spectrum of Reticulate Pigment Disorders

Dear Editor,

Reticulate pigmentary disorders (RPD) is a term used to classify a spectrum of several acquired and congenital disorders. Different clinical features can be present, including a reticular pattern and a freckle-like pattern with hyper- or hypo-pigmented macules (1).

Dowling-Degos disease (DDD), an autosomal dominant genodermatosis, is the main type of RPD (2). Clinically, DDD presents with pigmented, reticulate, flexural macules and comedo-like papules on the back and neck. Galli-Galli disease (GGD) is a very rare variant of DDD, from which is clinically indistinguishable (3).

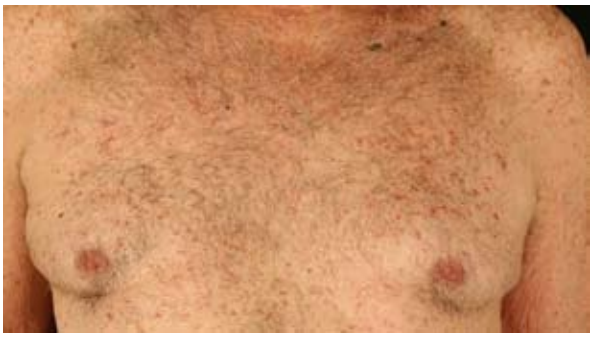

Figure 1. Diffuse maculo-papular lesions involving the trunk.

A 65-year-old Caucasian male patient presented to our Department with a 6-year history of diffuse maculopapular lesions involving the trunk and the extensor and flexor regions of the upper and lower extremities (Figure 1). These lesions were small, monomorphous, erythematous macules and papules, some covered by discrete scales. Numerous brown lentiginous macules were also observed. The patients did not present with comedo-like lesions, reticulate pigmentation, pitted acneiform facial scars, palmar pits, or nail changes. Furthermore, the oral mucosa showed no lesions. The patient's familial history was negative for dermatoses. Laboratory routine tests were all negative. Topical and oral steroids as well as systemic retinoids were unsuccessful. Therefore, a punch biopsy was performed.

Histologic examination showed a digitate elongations of rete ridges, with small foci of acantholysis (Figure 2, a). The epidermis showed a finger-like projections extending into the papillary dermis with increased melanin pigment. The epidermis was atrophic above the digitate proliferations and above the acantholytic foci, where necrotic and dyskeratotic

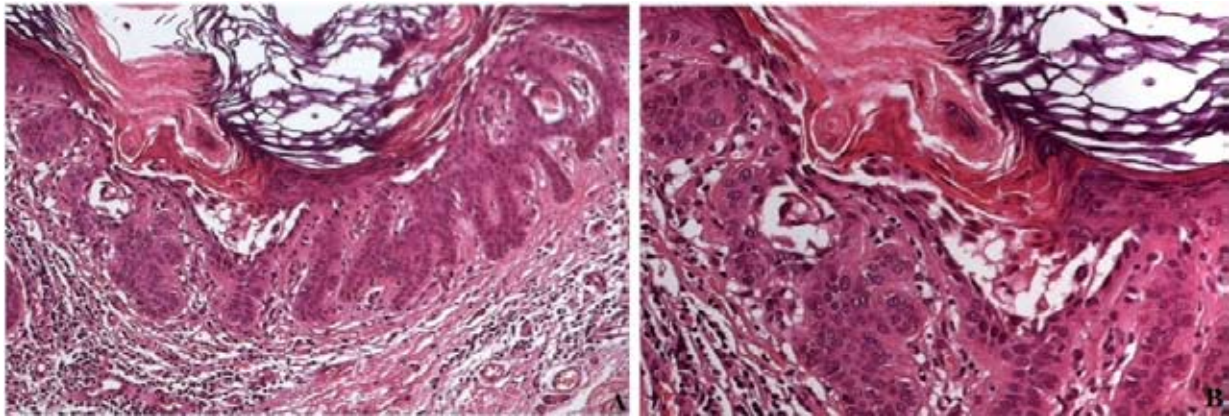

Figure 2. (a) Digitate elongations of rete ridges, with small foci of acantholysis. A lymphohistiocytic infiltrate with a perivascular distribution was detected in the papillary dermis. (b) The epidermis was atrophic above the digitate proliferations. Necrotic and dyskeratotic keratinocytes were also detected.

Acta Dermatovenerol Croat
2017;25(4):300-302

Table 1. Principal clinico-pathological differential diagnoses

DISEASE	*CLINICAL*	*PATHOLOGY*
Darier's disease	Crusted, yellow-brown macules-papules; often associated with nail and mucous membrane involvement.	Absence of digitate proliferation. Focal hyperkeratosis, focal suprabasal acantholysis; dyskeratotic keratinocyets with cytoplasm clearing (corps ronds) and pyknotic nuclei (grains).
Solar lentigo	Pigmented maculo-papular lesions, predominantly on sun exposed-sites.	Absence of acantholitic foci. No epidermal finger-like projections, increased melaninin on basal layer and few melanocytes.
Grover's disease (lentiginous variant)	Pruritic tiny papules and macular freckling over the limbs, upper trunk and neck on trunk (usually men >50 years). Unusual involvement of lower legs with lentigo-like macules (lentiginous variant).	Focal suprabasal acantholysis with dyskeratosis and hyperkeratosis, with occasionally fibrinous exudate in cornified layer. Absence of lentiginous elongation of rete ridges.
Dowling-Degos disease	Flexural pigmented reticulate macules and/or comedo-like papules on the back and/or the neck (dark dot follicles).	Increased pigmentation of the basal layer, with finger-like epithelial down growth. Presence of keratotic plugs in some areas. Absence of acantholytic foci.
Kitamura's disease	Clinically indistinguishable from GGD. Pigmented, angulated, irregular freckle-like lesions with atrophy on the surface, in a reticulate pattern on the dorsa of the hands and feet.	Epidermal atrophy with club-like elongation of the rete ridges and an excess of melanin in the basal layer. Absence of acantholytic foci.
Dohi's syndrome	Pigmented and depigmented macules mixed in reticular pattern on the extremities. It can have a proximal extension.	Epidermal atrophy and an increase in the number of basal melanocytes. Absence of breaks in the epidermal rete ridge pattern and of acantholytic foci.
Haber's syndrome	Rosacea-like eruption of the face and profuse keratotic lesions representing seborrheic keratosis, which are seen predominantly on the trunk, especially on the flexures.	Down-growth of epidermal rete ridges in a filiform shape. No acantholytic foci, no epidermal atrophy.
Galli-Galli disease	Similar to DDD but no pitted scars and no comedo-like lesions. Presence of erythematous macules and keratotic papules.	Increased pigmentation of the basal layer, with finger-like epithelial down-growth. Presence of keratotic plugs in some areas. Presence of acantholytic foci.

GGD: Galli-Galli disease; DDD: Dowling-Degos disease.

keratinocytes also were found (Figure 2, b). In the papillary dermis, a lymphohistiocytic infiltrate with perivascular distribution was detected (Figure 2, a).

According to the clinical and histological findings, a final diagnosis of Galli-Galli disease with lentigo-like macular lesions was established. The patients started 25 mg/day acitretin with only partial improvement.

GGD is now considered a variant of DDD, from which is clinically indistinguishable (2,3). Several differential diagnosis can be considered, including Darier's and Groover's disease (2-9) (Table 1). Because of the absence of digitate proliferation of the rete ridges and the presence of yellow or brown macules, Darier's disease can be distinguished from GGD. In our patient, the involvement of the lower legs and the presence of unusual brown, lentigo-like macules were accurately evaluated, because of the major diagnostic pitfall with an extensive kind of Grover's-like eruption with lentiginous freckling (6). However, the involvement of sun-shielded areas and the histological presence of a lentiginous elongation of rete ridges led us to a final diagnosis of GGD. Regarding the pathogenesis, the alteration of the keratine 5 gene (12q13.13) may be the main factor in GGD. In GGD, a reduced amount of functional keratin 5 impairs the structure of keratin intermediate filaments (10). As a result, the structure of the epidermis is affected, leading to alterations in desmosomes and hemidesmosomes (2).

Regarding the lentigo-like pattern of our patient, the additional diffusion of lentigos over shield-sites and the absence of extreme sun exposure in the patient's history ruled out the ultraviolet radiation as the main etiopathogenetic factor. In this regard, as reported by Girard *et al.,* lentigos could represent a post-inflammatory pigmentation of the papular acantholytic lesions (10). However, as emphasized by Coper *et al.* (6), the persistence of lentigos for several years would contrast with this hypothesis. It is indeed known that a failure of keratin 5 may disrupt the movement of pigment-carrying melanosomes into keratinocytes. The disruption of melanosome transport is thought to be the cause of the pigmentation abnormalities seen in DDD as well as in GGD. These aspects could explain the elongated rete ridges and the altered pigmentation clinically and pathologically observed in GGD and DDD.

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Received: April 5, 2016
Accepted: November 4, 2017