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CASE REPORT

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Lichen planus pigmentosus inversus limited to the umbilicus — a case report with dermoscopic findings

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ABSTRACT

Lichen planus pigmentosus inversus (LPPI) is a rare variant of lichen planus. Its etiopathogenesis is not fully understood. Koebner's phenomenon is considered to be a potential triggering factor, which may explain the localization of skin lesions in flexural and intertriginous areas that are not exposed to ultraviolet. A case of a 32-year-old female patient is reported, in whom the umbilicus was the only site involved by LPPI. Dermatoscopy revealed irregular pinkish structureless areas intermingled with whitish lines, grey dots, and a grey-black structureless area. The observed features did not allow a clear diagnosis. Due to the unknown duration of the lesions and technical difficulties with videodermoscopic monitoring, the lesion was excised with a 1-mm margin. Histopathological examination was consistent with the diagnosis of LPPI.

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Keywords: lichen planus pigmentosus inversus, melanocytic nevus, dermatosurgery, dermoscopy

CASE REPORT

A 32-year-old woman was admitted to the Department of Dermatology at Medical College of Rzeszow University for evaluation of a grey-brown-pink patch of unknown duration located in the umbilicus (Fig. 1). The patient reported moderate pruritus of the surrounding skin of 6-month duration, rated as 4 on a scale of 0 to 10. The patient was otherwise healthy, and she did not take any medications. She denied having suffered any trauma that could provoke the skin lesion.

Physical examination did not reveal the presence of lesions of similar morphology in other locations. Dermatoscopy showed irregular pinkish structureless areas intermingled with whitish lines, grey dots, and a grey-black structureless area in the top left corner. At the periphery of the lesion, white lines resembling Wickham striae could be noticed (Fig. 2).

Due to unspecific dermatoscopic presentation and unknown duration, the lesion was completely excised with a 1 mm margin. An atypical melanocytic lesion, including melanoma,

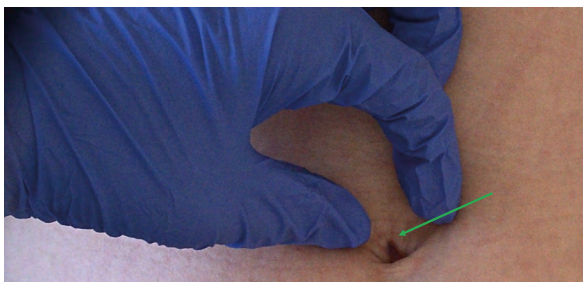

Figure1. Clinical presentation — a brown-pink patch in the umbilicus

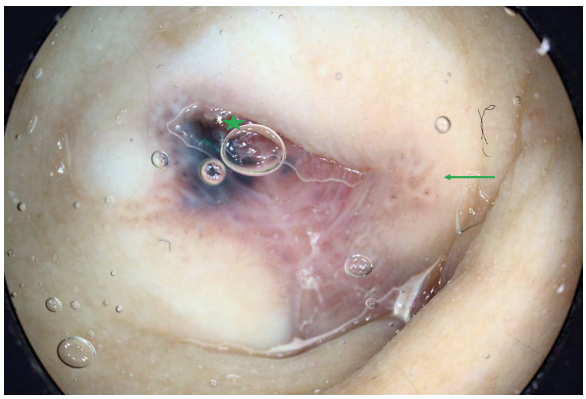

Figure 2. Dermoscopic view: irregular pinkish structureless areas intermingled with whitish lines, grey dots, and a grey-black structureless area in the top left corner (green star). White lines resembling Wickham striae are present at the periphery of the lesion (green arrow)

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was taken into consideration in the differential diagnosis. Histopathological examination showed hypertrophic stratum corneum and granular layer, the proliferation of the squamous layer with the characteristic "saw tooth" appearance, hydrotic degeneration, presence of cytoid bodies, melanophages and melanin incontinence (Fig. 3–5). In the superficial dermis, a band-like lymphocytic-histiocytic inflammatory infiltrate was present. Immunohistochemical examination of the infiltrate revealed SOX10(–), CD3(+), and CD20(+) cells. Based on the clinical presentation, dermoscopy, and histopathology, the diagnosis of the inverse subtype of lichen planus pigmentosus, so-called lichen planus pigmentosus inversus (LPPI), was made.

DISCUSSION

Lichen planus pigmentosus inversus (LPPI) is a rare variant of lichen planus (LP), that was first described by Pock et al. in 2001 [1]. It is characterized by the presence of sharply demarcated, darkly pigmented, brown-grey papules, macules, and plaques. Contrary to the classical variant of LP, LPPI tends to involve intertriginous and flexural areas that are not exposed to ultraviolet, such as the axillae, groins, and submammary folds [2].

The aetiology of this disease is not fully understood. The pathophysiology of LPPI may be related to the direct effect of cytotoxic T lymphocytes and Langerhans cells on keratinocytes, leading to the development of inflammatory reaction and subsequent pigment incontinence [3, 4]. External mechanical stimuli, such as friction from wearing tight clothes or underwear (Koebner's phenomenon), have been considered as a trigger for the formation of skin lesions. This could explain the occurrence of skin lesions in intertriginous area [5]. Cases of co-occurrence of LPPI with hepatitis C virus infection [6], endocrinopathies, lichen planopilaris or other variants of LP have also been described [7, 8]. The differential diagnoses include erythrasma, acanthosis nigricans, ashy dermatosis, postinflammatory hyperpigmentation, and fixed drug eruption [9]. On histopathological examination, LPPI displays similar features to the classical form of LP, namely a band-like lymphohistiocytic infiltrate in the papillary dermis and the presence of superficial vacuolar changes. However, LPPI may also show epidermal atrophy and minimal hyperkeratosis and hypergranulosis. In addition, pigment incontinence is prominent [12]. These features were also observed in the study patient.

Due to the rarity of LPPI, data on the dermoscopic findings in this entity is scarce. In the reports available so far, brown to bluish-grey dots, globules, blotches and white lines on a diffuse brown background were noticed [10]. Murzaku et al. [11] suggested that the brown colour is indicative of epidermal pigmentation, while the presence of greyish-blue dots and globules corresponds to pigment incontinence in the papillary and reticular dermis.

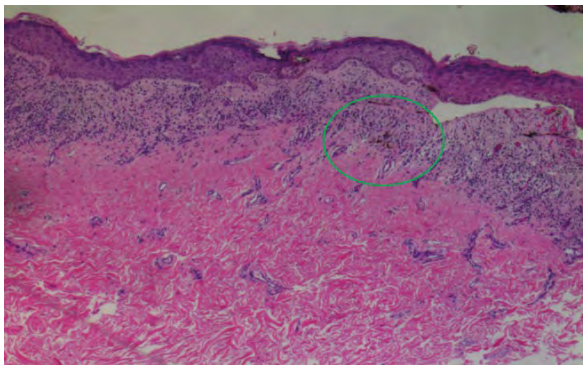

Figure 3. Histopathological examination showing band-like lymphohistiocytic infiltrate and pigment incontinence in the upper layers of the dermis; (HE, 40×)

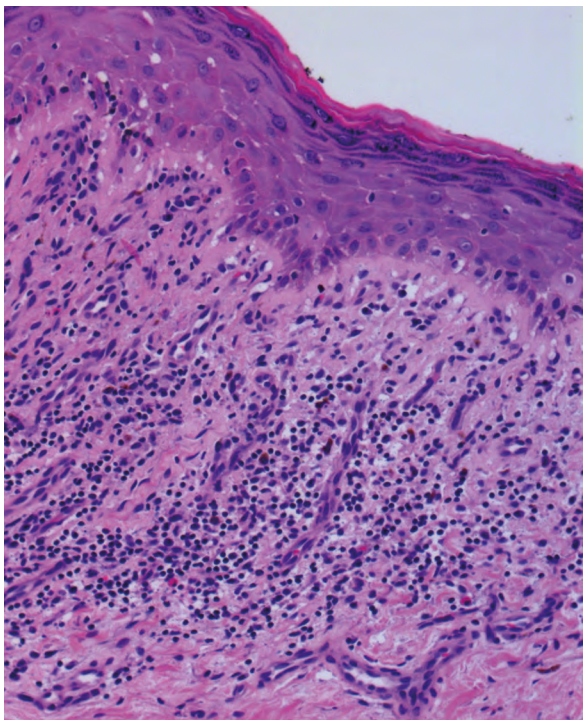

Figure 4. Histological view: melanophages (HE, 200×)

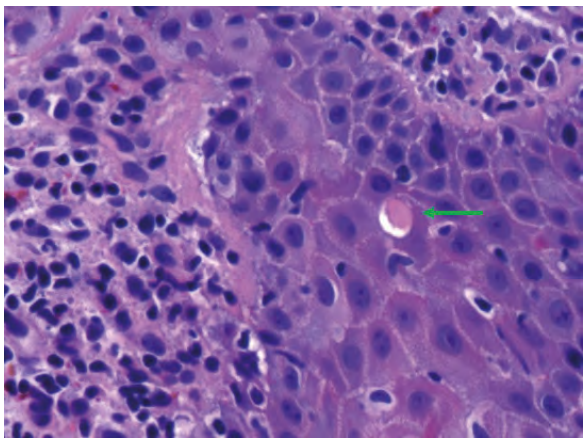

Figure 5. Cytoid body — green arrow (HE, 630×)

In the literature, this variant of LP is suggested to be more resistant to treatment with potent topical corticosteroids or calcineurin inhibitors, as well as with oral corticosteroids. Gajjar et al. [13] suspected, that the presence of melanophages in the dermis might be responsible for unsuccessful treatment attempts. Other therapeutic options include hydroquinone creams [3] and narrow-band ultraviolet B phototherapy, which, on the other hand, were demonstrated to be of help [14]. Cases of spontaneous resolution of skin lesions have also been described [15].

CONCLUSIONS

This study reports a case of LPPI in an unusual location, which was the umbilicus. The lesion was initially suspected to be of melanocytic origin. Due to technical difficulties with proper visualization and monitoring, it was completely excised and histopathologically diagnosed as LPPI.

Conflict of interest

The authors report no competing interests.

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