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Characteristics of Nails with Lichen Planus

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Abstract: The study revealed that the most common nail lesions in lichen planus are longitudinal grooves, general dystrophic changes in the nails in the form of fragility, onychorrhexis and trachyonychia. It was also noted that lichen planus is characterized by severe irreversible changes in the nails, such as anonychia and pterygium. In the course of this work, we noted the evolution of pathological changes in the nails in lichen planus. This observation can be useful in the diagnostic search and choice of treatment tactics in the early stages of the lesion.

Keywords: dermatology, lichen planus, signs, treatment.

Relevance. Lichen planus (LP) is a chronic benign inflammatory disease affecting the skin, its appendages, and mucous membranes [1]. There are many forms of LP with different clinical manifestations. Despite this, the classic skin lesions in LP are purple polygonal flat papules crossed by thin white lines and accompanied by itching [2]. According to various studies, nail lesions occur in 10-15% of patients with LP [1, 3, 4]. The severity of nail plate lesions in LP depends on the structures of the nail apparatus involved in the pathological process (nail matrix or nail bed). Changes in nails in LP can provoke severe psychological and functional disorders in patients, leading to irreversible pathological changes in the nail apparatus. This article discusses the clinical manifestations of nail lesions in LP, issues of the dermatoscopic picture of the disease, and highlights possible treatment options.

Clinical and epidemiological picture of nail lesions in LP. Damage to the nail plates occurs in approximately 10-15% of patients with LP [1, 3, 4]. Nail lesions are more common in adult patients than in children; fingernails are affected more often than toenails [5]. Isolated nail lesions without involvement of the skin and mucous membranes are very rare and are observed mainly in men in the fifth and sixth decades of life [4].

In LP, both the nail matrix and the nail bed are affected. The prognosis of the disease depends on the severity of the lesion of a particular part of the nail apparatus, since some pathological changes, for example, dorsal pterygium, are irreversible. According to various studies, the most characteristic nail changes in LP are: thinning; onychorrhexis; longitudinal grooves; melanonychia; spotted, red, deformed lunula; onychoschisis; trachyonychia; dorsal pterygium; anonychia; Beau's lines; onycholysis; subungual hyperkeratosis; longitudinal hemorrhages; erythema of the nail bed; onychomadesis; punctate depressions [6, 7].

The variety of clinical signs of nail lesions in LPP is the result of the transformation of one type of dystrophy into another during the development of the inflammatory process. Thus, onychorrhexis, as one of the most common types of onychodystrophies in LPP [6, 7], is a severe form of longitudinal grooves - another type of onychodystrophies, which also refers to frequent variants of nail lesions in LPP [6, 7]. With further spread of onychorrhexis in the direction of the nail matrix, fragmentation of the nail plate may occur.

The most severe irreversible types of nail lesions in LP are dorsal pterygium and anonychia. Dorsal pterygum is an overgrowth of the proximal fold, its further connection with the nail matrix, and then with the nail bed. This type of dystrophy is one of the most characteristic signs of nail lesions in LP [2]. Progression of dorsal pterygium can lead to splitting of the nail plate with further atrophy of the nail bed and the development of total and/or partial anonychia.

In addition, trachyonychia, a type of onychodystrophy in LP, should be separately distinguished. Trachyonychia is a disorder of the nail apparatus, characterized by the appearance of multiple pronounced longitudinal grooves or homogeneous multiple point depressions depending on the clinical form of the disease. The forms of trachyonychia were first described by Baran [8] in 1981, where trachyonychia was divided into shiny and opaque, which directly affects the further prognosis of the disease. The literature describes many cases of idiopathic trachyonychia mainly in children [9]. Despite this, LP has a very strong association with the development of trachyonychia [10, 11], along with psoriasis [12] and focal alopecia [8, 13, 14].

Dermatoscopic findings of nail lesions in LP are similar to clinical findings, but this examination can detect abnormalities at earlier stages. Pathological changes include rough and brittle nails, pitting, red or mottled lunula, onychorrhexis, longitudinal grooves (Fig. 4), longitudinal splitting (Fig. 5) and fragmentation of nails, chromonychia, longitudinal hemorrhages, onycholysis, subungual hyperkeratosis, longitudinal grooves converging toward the center of the nail, longitudinal linear bands of dyschromia [15-18].

Dermatoscopic signs of nail lesions in LP are in many ways similar to clinical ones, but allow for earlier diagnosis of pathological changes and initiation of therapy.

Therapy of nail lesions in LP is a complex clinical task. To date, there are many studies devoted to long-term monitoring of cure and management of patients with nail lesions in LP. The situation is also complicated by the fact that such pathological changes of nails in LP as dorsal pterygium and anonychia are irreversible.

Local therapy of nail lesions in LP includes the use of drugs containing topical glucocorticosteroids (GCS - clobetasol propionate), topical calcineurin inhibitors (Tacrolimus) and retinoids (Tazarotene). Also, one of the treatment options is intralesional injections of GCS (triamcinolone acetonide) into the area of the matrix of the affected nail. These methods show a weak therapeutic effect due to low absorption of drugs and high risks of developing side effects with their long-term use [5].

Currently, the first line of therapy for nail lesions in LP is the combined use of GCS, both orally and intramuscularly [5]. A number of studies have shown that the combined oral and intramuscular use of GCS, in particular triamcinolone acetonide, allowed for a significant improvement in the condition of the nail plates and the maintenance of their condition for 1-5 years after treatment [1, 3, 4, 6].

The potential of biological therapy and its effectiveness in the treatment of nails in LP have not been fully studied. The results of a few studies have shown the effectiveness of biological drugs (tofacitinib and baricitinib) in the treatment of nail lesions in LP [19, 20].

Conclusion. Nail lesions in LP represent a major medical and social problem, causing both psychological and physical discomfort in patients. Timely diagnosis of pathological changes in the nail plates and the earliest possible start of treatment are crucial in maintaining the integrity of the entire nail apparatus of patients with LP. Dermoscopy of the nail plates as an additional examination method can help to identify nail changes at the earliest stage, which, in turn, will require more gentle treatment. Considering that some types of nail lesions in LP are irreversible, constant monitoring of the patient's condition is of fundamental importance.

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