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PATHOMORPHOLOGICAL CHARACTERISTICS OF LICHEN PLANUS

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✓ ***Resume***

This article presents the results of the pathomorphological study of the skin in patients with lichen planus. The research base consisted of 80 patients. Orthokeratosis, atrophy, vacuolar degeneration of basal layer cells are observed in the morphological examination. In the dermis, a lymphocytic-histiocytic infiltrate is seen around the vessels of the papillary dermis, and several macrophages are visible along the periphery. A dense lichenoid, perivascular, periadnexal infiltrate consisting of lymphocytes, histocytes, melanophages and single melanophages is detected in the reticular layer of the dermis.

Key words: lichen planus, pathomotphology, epidermis, acanthosis, derma.

ПАТОМОРФОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ПЛОСКОГО КРАСНОГО ЛИШАЙЯ

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✓ ***Резюме***

В статье представлены результаты патоморфологического исследования кожи больных плоским лишаем. Исследовательскую базу составили 80 пациентов. При морфологическом исследовании наблюдают ортокератоз, атрофию, вакуолярную дистрофию клеток базального слоя. В дерме вокруг сосудов сосочковой дермы виден лимфоцитарно-гистиоцитарный инфильтрат, по периферии видны несколько макрофагов. В сетчатом слое дермы выявляют плотный лихеноидный, периваскулярный, периаднексальный инфильтрат, состоящий из лимфоцитов, гистоцитов, меланофагов и единичных меланофагов.

Ключевые слова: плоский лишай, патоморфология, эпидермис, акантоз, дерма.

QIZIL YASSI TEMIRATKINING PATOMORFOLOGIK XUSUSIYATLARI

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✓ ***Rezyume***

Ushbu maqolada qizil yassi temiratkisi bo'lgan bemorlarda terining patomorfologik tadqiqot natijalari keltirilgan. Tadqiqot bazasi 80 nafar bemordan iborat edi. Morfologik tekshirishda epidermisda ortokeratoz, atrofiya, bazal qatlam hujayralarining vakuolyar degeneratsiyasi kuzatiladi. Dermisda papillyar dermis tomirlari atrofida limfotsitar-gistiotsitar infiltrat, periferiya bo'ylab bir nechta makrofaglar ko'rinadi. Dermisning retikulyar qatlamida limfotsitlar, gistotsitlar, melanofaglar va bitta melanofaglardan tashkil topgan zich likenoid, perivaskulyar, periadneksal infiltrat aniqlanadi.

Kalit so'zlar: qizil yassi temiratki, patomotfologiya, epidermis, akantoz, derma.

Relevance

Lichen planus (LP) is a relatively rare dermatosis affecting 1% of the world's population. Being morphologically heterogeneous, LP can manifest itself in various clinical variants. The difficulty in diagnosing and treating LP lies in its similarity to numerous other dermatoses. In this case, morphological (histological) examination is considered the "golden method", or standard, of research. Correct diagnosis, as well as differential diagnosis, requires extensive experience and correlation with various models of inflammation.

The purpose of this study is the pathomorphological examination of the skin in patients with Lichen planus.

Materials and methods

In our scientific work, the main group of patients studied were patients with various forms of LP. Scientific work was carried out in the period 2021–2022. The study base consisted of 80 patients who underwent both retrospective and prospective studies. The retrospective study included a search for archival material, medical history, their comprehensive assessment, and selection of the appropriate category of patients with various forms of LLP. After selecting 80 necessary patients by telephone call, they were invited for additional examination. The prospective study included consultation of the patient, study of primary and secondary morphological elements, collection of anamnesis, catamnesis, enzyme-linked immunosorbent assay, skin biopsy, followed by histological and immunohistochemical examination. The main criteria for the disease were the presence of flat polygonal papules on the skin in varying degrees of severity, skin pigmentation in place of resolved elements, hair loss, as well as nodular elements on the lower leg. At the same time, the existing clinical manifestations of the disease were compared and a clinicopathological correlation with similar dermatoses was carried out. Of the 80 patients examined, 50 women and 30 men aged from 30 to 75 years (average age - 52±1.0 years).

Results and conclusions

After a clinical examination, blood sampling for laboratory, immunoenzyme and PCR studies, we performed a diagnostic skin biopsy followed by histological examination.

Histological examination was performed in all 80 patients in groups. To confirm the diagnosis, each specific case was assessed and reviewed by several dermatopathologists from the university clinic of the St. Petersburg State Pediatric Medical University of the Ministry of Health of the Russian Federation. Each histological report was correlated and compared with the clinical data of the patients. Data such as the duration of the disease, treatment received by patients, and refractoriness to therapy were taken into account. All unverified diagnoses were excluded from the study and replaced with other histological retrospective specimens. The final clinicopathological diagnosis was verified in 40 out of 80 (50%) patients with the classic form of LP. The diagnosis of "pigmented form of lichen planus" was made in 15 out of 80 (19%) people. The hypertrophic form of LP was confirmed in 10 out of 80 (12.5%) patients. Lichen planus of the scalp was detected in 3 out of 80 (4%), while LP of the oral cavity was detected in 2 out of 80 (2.5%), and forms such as atrophic, actinic, bullous, invert and nail plates, in only 1 out of 80 (1.25%) patients. Due to the rarity of the above-described forms of LP in the studied populations, the last 10 cases were included in the group "LP, other forms." Thus, all examined patients were divided into 4 large groups.

The main histological features in the epidermis of the first group were orthokeratosis throughout the entire section (n = 30/40; 75%), wedge-shaped hypergranulosis (n = 40/40; 100%), diffuse and serrated acanthosis (n = 40/40; 100%), vacuolar and hydropic degeneration of the cells of the basal

layer of the epidermis (n = 40/40; 100%), intercellular edema of varying severity (spongiosis) (n = 15/40; 37.5%), the presence of apoptotic cells at the level of the spinous layer of the epidermis (n = 20/40; 55%) and in some cases - parakeratosis (n = 2/40; 5%). In the dermis, minor swelling and Max – Joseph clefts were observed in the papillary layer (n = 10/40; 25%), lichenoid (n = 40/40; 100%) and perivascular (n = 40/40; 100%) lymphocyte infiltrate (n = 40/40; 100%), histiocytes (n = 40/40; 100%) and melanophages (n = 20/40; 50%) (see Figures 1,2).

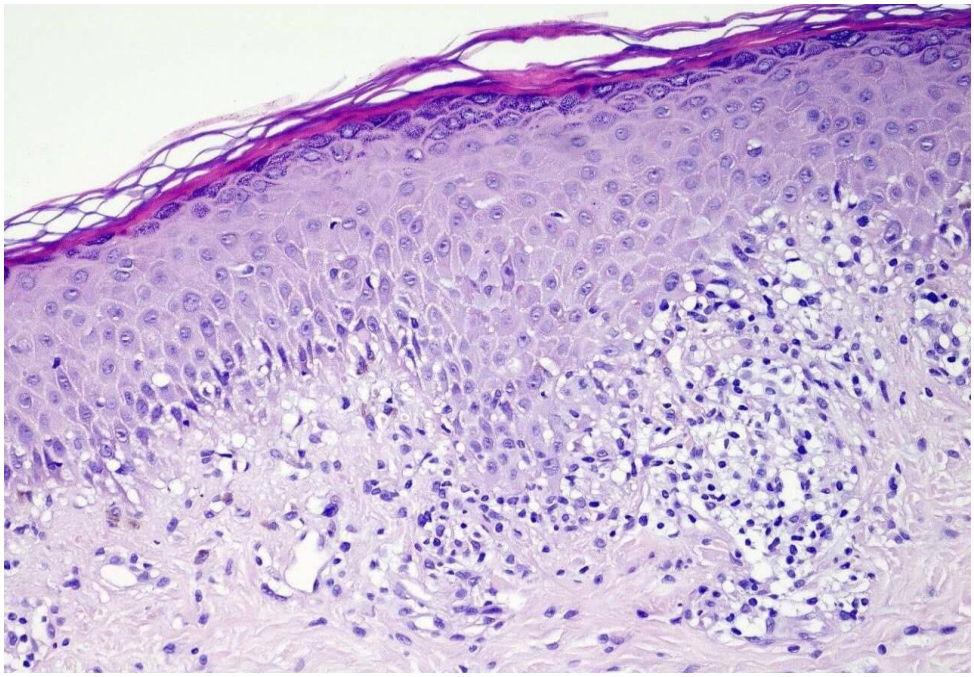

Fig. 1*. Diagnosis - lichen planus, classic form. The epidermis exhibits orthokeratosis, hypergranulosis, vacuolar degeneration of the basal layer cells and a diffuse lichenoid infiltrate from lymphocytes and histiocytes in the papillary layer of the dermis. Coloring hematoxylin and eosin. ×200*

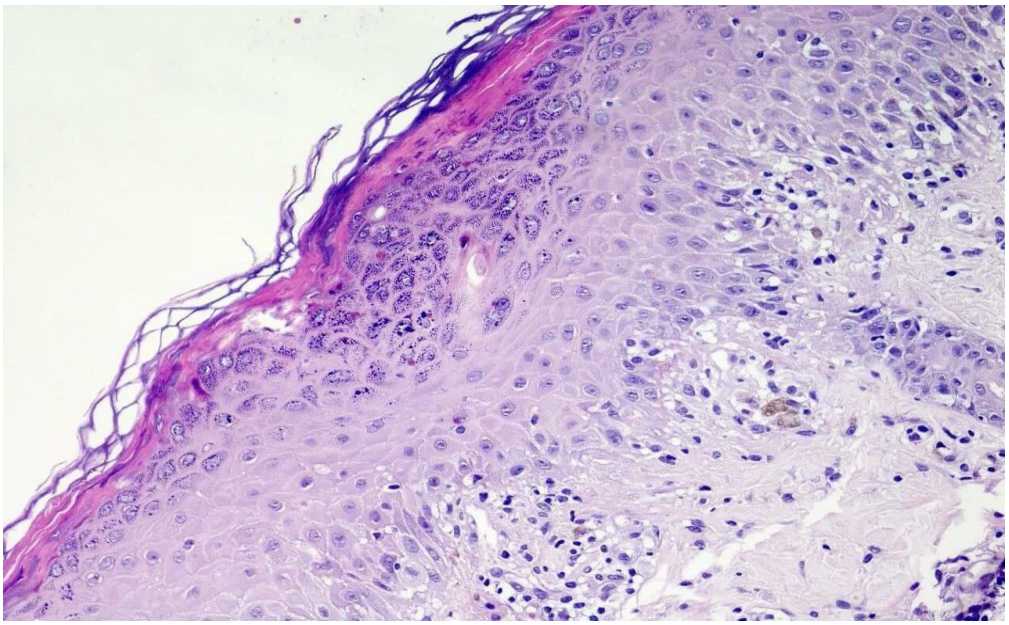

Fig. 2. *Diagnosis - lichen planus, classic form. In the epidermis, orthokeratosis, wedge-shaped hypergranulosis, single apoptotic cells, vacuolar degeneration of the cells of the basal layer and lymphocytic-histiocytic infiltrate in the papillary layer of the dermis are noted. Hematoxylin and eosin staining. ×200*

In the second group of patients with the hypertrophic form of LP, signs such as uneven and wedge-shaped hypergranulosis (n = 6/15; 40%), vacuolar (n = 15/15; 100%) and hydropic dystrophy (n = 6/15; 40%) cells of the basal layer of the epidermis, in some cases local hypogranulosis (n = 4/15; 26.6%), uneven acanthosis (n = 6/15; 40%), in a small amount focal spongiosis (n = 3/15; 20 %), as well as apoptotic cells (n = 5/15; 33.3%). Edema was detected in the papillary dermis in 3 of 15 (20%) patients were noted. Among the inflammatory infiltrate, perivascular (n = 15/15; 100%) prevailed over lichenoid infiltrate (n = 10/15; 66.6%), consisting of lymphocytes (n = 15/15; 100%), histiocytes (n = 15 /15; 100%) and melanophages (n = 15/15; 100%).

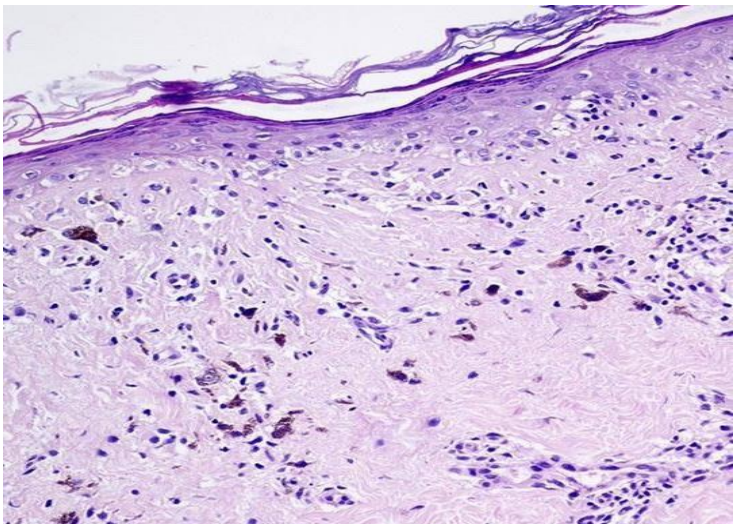

Fig. 3. *Diagnosis - lichen planus, pigmented form. In the epidermis, orthokeratosis, atrophy, and vacuolar degeneration of the cells of the basal layer are observed. In the dermis there is lymphocytic -histiocytic infiltrate around the vessels of the papillary dermis with multiple macrophages along the periphery. Hematoxylin and eosin staining. ×200*

In the third group of patients, the histological signs in the epidermis included hyperkeratosis (n = 3/10; 30%), diffuse orthokeratosis (n = 10/10; 100%), local parakeratosis (n = 1/10; 10%), wedge-shaped and local hypergranulosis (n = 7/10; 70%), local hypogranulosis (n = 3/10; 30%), diffuse acanthosis (n = 10/10; 100%), hydropic (n = 3/10; 30%) and vacuolar (n = 7/10; 70%) degeneration of cells in the basal layer of the epidermis (see Figure 3), local spongiosis (n = 2/10; 20%) and a small number of apoptotic cells (n = 4/10; 40%).

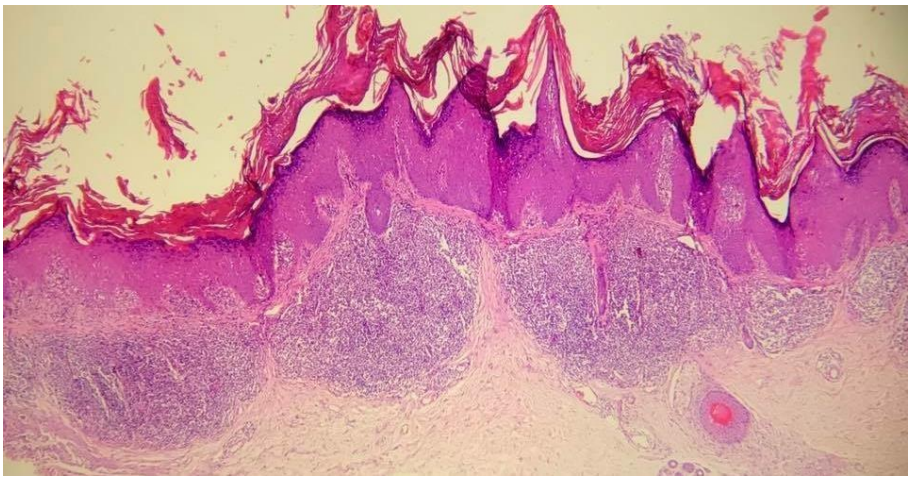

Fig. 4*. Diagnosis - lichen planus, hypertrophic form. In the epidermis, pronounced orthohyerkeratosis, uneven acanthosis, wedge-shaped, diffuse hypergranulosis and vacuolar degeneration of cells of the basal layer of the epidermis. In the mamillary layer. The dermis will show a dense, band-like lichenoid mixed cellular infiltrate of lymphocytes and histiocytes. Hematoxylin staining and eosin. ×100*

Due to the duration of the lesions, edema of the papillary dermis in this group was detected in only 1 of 10 (10%) patients, while Max - Joseph clefts were detected in 3 of 10 (30%) patients, respectively. In the reticular layer of the dermis, a dense lichenoid, perivascular, periadnexal infiltrate, consisting of lymphocytes, histiocytes, melanophages and single melanophages, attracted attention. All of the above histological signs were observed in 10 out of 10 (100%) patients. Only periadnexal infiltrate was observed in 8 out of 10 (80%) patients with the hypertrophic form of LP. Another pathomorphological sign was sclerosis of the dermis at the level of the reticular layer of the dermis (n = 2/10; 20%).

In the fourth group, we tried to combine the remaining 10 cases together and apply them to all remaining forms of LLP. It should be noted that the bullous form occurred during biopsy from the oral cavity, and therefore the epidermis was represented by stratified squamous non-keratinizing epithelium. While the LLP of the scalp was represented by multiple hair follicles, and the mixed cellular infiltrate was predominantly located around them. In all forms of the disease, the following pathomorphological signs were identified: local/diffuse orthokeratosis (n = 5/10; 50%), local/wedge-shaped hypergranulosis (n = 8/10; 80%), local hypogranulosis (n = 6/10; 60%), varying severity and form of acanthosis (n = 7/10; 70%), vacuolar (n = 6/10; 60%) and hydropic (n = 4/10; 40%) degeneration of cells of the basal layer of the epidermis, spongiosis (n = 2/10; 20%) and apoptosis (n = 3/10; 30%) in acute courses of the disease. In the dermis, swelling of the papillary layer of the dermis (n = 4/10; 40%), Max – Joseph fissures (n = 2/10; 20%), lichenoid and perivascular infiltrate (n = 10/10; 100%), in a number of cases cases, accumulations of inflammatory cells around the hair follicles were noted (n = 4/10; 40%). In all cases, the main component of the infiltrate were lymphocytic and histiocytic cells (n = 10/10; 100%).

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