FEATURES OF THE CYTOLOGICAL PICTURE AT MULTIFORME EXUDATIVE ERYTHEMA IN THE ORAL CAVITY

Yu. Lakhthin¹, Doctor of Medicine, Associate Professor
P. Moskalenko², Candidate of Medicine, Assistant
L. Karpez³, Candidate of Medicine, Assistant
Sumy State University, Ukraine¹,²
Kharkiv Post-graduate Medical Academy, Ukraine³

Authors have studied the cytological picture of contents of the erosions in patients with toxic-allergic form of the multiforme exudative erythema in the oral cavity. It was found out that the composition of cellular elements is specific for the exudate of nonspecific inflammation. Hematogenous and histiogenous cells are mostly not destroyed. There are numerous mononuclear type cells, polyblasts, eosinophils and epithelium frequently being in the state of hydropic degeneration.

Keywords: multiforme exudative erythema, toxic-allergic reaction, cytology, eosinophils, polyblasts, mononuclear cells.

Introduction. Multiforme exudative erythema (MEE) is an acute polymorphic dermatosis, which occurs in the form of a bluish-red colour rash on the skin of the extremities, mucous membranes, sometimes in the genital area [1].

The etiology of MEE is not fully understood, so the causes of the disease are varied, but in patients with this disease there is some triggering factor which triggers the mechanism of the immune reaction of hypersensitivity. One of them is the infectious diseases caused by the herpes simplex virus [10], Chlamydia [8] and mycoplasma pneumonia [13]. Another factor is the allergens of medicamentous nature [2, 5-7].

In this regard, many local authors identify infectious-allergic (idiopathic) and toxic-allergic (symptomatic) forms of MEE. In the development of idiopathic form the main trigger factors are infections. In toxic-allergic form the hypersensitivity to different medications is revealed [3]. Toxic-allergic form is characterized by vivid hyperemia, a tendency to merging of lesions, frequent lesions of the mucous membranes, including genital, expressed epidermolytic component (vesicles), isomorphic reaction. Infectious-allergic form is often present in the form of small elements of the "stagnant" shade that do not have a tendency to merge, being preferentially localized on the extremities and less frequently on the mucous membranes [2].

In the clinical practice, the foreign experts often distinguish two forms of MEE - big and small. Both are characterized by the same type of primary lesions, but differ in the presence or absence of mucosal lesions and general symptoms [14].

According to the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) - WHO Version (2016), the following forms of MEE (L51 Erythema multiforme) are distinguished: L51.0 Nonbullous erythema multiforme, L51.1 Bullous erythema multiforme, Stevens-Johnson syndrome, L51.2 Toxic epidermal necrolysis [Lyell], L51.8 Other erythema multiforme, L51.9 Erythema multiforme, unspecified [9].

As the disease develops acutely, it demands the treatment at an early stage. However, cystic syndrome in the oral cavity appears at a number of dermatoses (Lyell's syndrome, acantholytic and non-acantholytic pemphigus, bullous pemphigoid, Duhring's disease, bullous form of Lichen ruber planus, vesical-vascular syndrome, acute herpetic stomatitis), which requires timely differential diagnosis of this condition. One of the methods of diagnosis of MEE is cytology. It is relatively informative, non-invasive; it takes little time and is acceptable to patients.

The aim of the study was to investigate the features of the cytopathological image of various forms of multiforme exudative erythema in oral cavity.

Materials and methods. The study included 15 patients with MEE (6 men and 9 women), aged 26-57, directed to the department for consultation. We adhered to the domestic interpretation of the diagnosis formulation and considered the type of MEE in patients as a toxic-allergic, which corresponds to the code L51.1 Bullous erythema multiforme, Stevens-Johnson syndrome ICD-10. All patients, after removing the pellicle, underwent the sampling of the contents of erosion by scraping. The material was fixed in a solution of methanol, stained by Romanovsky-Giemsa method. In cytological preparations the qualitative and quantitative composition of hematogenous and histiogenous cellular elements was studied.

Results. All patients reported rapid development of the disease, usually within 1-2 days. There was sharp pain in the oral cavity even at rest, worse when speaking, moving the tongue or eating. From the medical history we found out that before the development of stomatitis the patients were treated, for various reasons, with medications (antibiotics, sulfonamides, non-steroidal anti-inflammatory drugs, tranquilizers).

It should be noted that here we indicate only groups of drugs, which, according to the literature, most commonly cause the toxic and allergic reactions. However, patients took, on their own or prescribed by a doctor, not only these drugs, but others as well: vitamins, desensitization, expectorants, antacid, etc. Therefore, it is difficult to indicate the specific source of the drug-induced allergic reactions.

While examining the oral cavity we observed diffuse or limited erythema and...
swelling of the mucous membranes of the lips, cheeks, floor of the mouth, tongue, soft palate. In some patients against this background there were sharply painful large erosions, while others had multiple grey or white fibrinous pellicles, which were pulled off difficulty, at the same time exposing the bleeding erosion. Gingiva was intact. The patients had no skin lesions (Fig. 1).

In preparations the cytologic picture is consistent with acute nonspecific inflammatory process: the accumulation of white blood cells, red blood cells, epithelial cells, microflora. Noteworthy is the presence of the unbroken eosinophils nearly in every field of view in cytological preparations of all patients. A large number of unaltered neutrophils and their clusters with vacuolated cytoplasm are found (Fig. 2).

Almost in every field of view monocytes and lymphocytes are identified. Most often they also have vacuolated cytoplasm (Fig. 3).

In addition to monocytes of vasogenic origin, the tissular monocytes (histiocytes) are seen. They were found most often in the transformed form as polyblasts and macrophages, but the phagocytic reaction was weakly expressed. They had different sizes and shapes (Fig. 4).

We have observed the sporadic epithelial cells in the state of hydropic degeneration or their layers (Fig. 5). Microbial background was represented scantily, mainly with coccal flora.

The role of many cells in the wound fluid is studied well enough. The presence of eosinophils, in most cases, testifies to allergic reactions. Their detection in the content of erosions should be conducted by a specialist in an appropriate genesis of a pathological condition. Lymphocytes and other mononuclear cells constitute the majority of wound exudate cells; they play a key role in the immune response, taking part in the processes aimed at maintaining homeostasis, the regulation of the inflammation intensity. Monocytes actively phage and digest microbes, erythrocytes and other cells. Circulating monocytes migrate into the inflammatory focus and differentiate into exudate macrophages. These cells, often with T-lymphocytes, constitute an inflammatory exudate. It is believed...
that polyblasts are formed partially from the lymphocytes by hypertrophy of the nucleus and protoplasm, partially from tissue histiocytes. The role of polyblasts in wound focus is enormous, as they produce immune bodies, and in other words, they are involved in the development of tissue immunity, in cleaning wounds from bacteria and dead cells and in regenerative processes [4, 12].

Conclusions. Thus, in a material of erosion at multiforme exudative erythema, clinical, immunological and therapeutic features, Attending physician], Lechashhij vrach [Attending physician] - 2003., No 9., pp. 4-9.

3. Klinicheskij slučaj razvitija mnogoformnoj jeksudativnoj jeritemi, toksiko-allergicheskogo tipa [Clinical case of development of multi-form exudative erythema, toxic-allergic type], Jakubovich A.I., Cyrenova S.A., Osipova E.A., Sibirskij medicinskij zhurnal [Siberian Medical Journal]. - Irkutsk., 2015.,No 1., pp. 113-115.

4. Jeozinofilny v otpechatkah rany. Limfocity v citologii rany [Eosinophils in the prints of the wound. Lymphocytes in the cytology of the wound], Access mode: http://meduniver.com/Medical/Biology/423.html

References:
1. Grigor’ev D.V. Mnogoformnaja jeksudativnaja jeritema, sindrom Stivensa–Dzhonsona i sindrom Lajella – sovremennaja traktovka problem [Multi-form exudative erythema, Stevens-Johnson syndrome and Lyell’s syndrome - a modern interpretation of the problem], RMZh. - 2013., No 22., p. 1073.

2. Ivanov O.L., Haldina M.V. Mnogoformnaja jeksudativnaja jeritema, klinicheskie, immunologicheskie i terapevticheskie osobennosti [Multi-form exudative erythema, clinical, immunological and therapeutic features., Attending physician], Lechashhij vrach [Attending physician] - 2003., No 9., pp. 4-9.

5. A importância das provas epicutâneas de contacto no diagnóstico diferencial de reações a medicamentos., Ana Rita Travassos, David Pacheco, Joana Antunes [et al.], Anais Brasileiros de Dermatologia. – 2011., Vol. 86(4, Suppl. 1.), pp. 21-23. https://doi.org/10.1590/s0365-05962011000700004

6. Bassi A., D’Erme A.M., Gola M. Erythema multiforme-like irritant contact dermatitis after application of an antiscabies treatment., International journal of immunopathology and pharmacology. – 2011., Vol. 24(2)., pp. 545-547.

7. Exudative Erythema Multiforme Due to Cyclobenzaprine., Gómez Torrijos E., García Arpa M., García Rodríguez C. [et al.], J Investig Allergol Clin Immunol. – 2016., Vol. 26(4)., pp. 265-266. https://doi.org/10.1177/0394632011024020032

8. Imashuku S., Kudo N. Chlamydia Pneumoniae Infection-Associated Erythema Multiforme., Pediatric Reports. – 2013., Vol. 5(2)., pp. 35-37. https://doi.org/10.4081/pr.2013.e9

9. International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-WHO Version for; 2016., Access mode: http://apps.who.int/classifications/icd10/browse/2016/en#/L50-L54

10. Kamala K.A., Ashok L., Annigeri R.G. Herpes associated erythema multiforme., Contemp Clin
11. Llamazares A.A., Beitia-Mazuecos J.M., Cardenas R., Vega-Castro A., Mateo-Borrega B. Ibuprofen-Induced exudative erythema multiforme after 1 week of continued therapy following oral challenge., Journal of Investigational Allergology and Clinical Immunology. – 2012., Vol. 22(5), pp. 376-377.

12. Van Furth R. Human monocytes and cytokines., Research in immunology. – 1998., Vol. 149(7), pp. 719-720.

13. Vargas-Hitos J.A., Manzano-Gamero M.V., Jiménez-Alonso J. Erythema multiforme associated with Mycoplasma pneumonia., Infection. – 2014., Vol. 42(4), pp. 797-798.

14. Williams P.M., Conklin R.J. Erythema multiforme: A review and contrast from Stevens-Johnson syndrome/toxic epidermal necrolysis., Dent Clin North Am. – 2005., Vol. 49., pp. 67–76.

Information about authors:

1. Pavlo Moskalenko – Candidate of Medicine, Assistant, Sumy State University; address: Ukraine, Sumy city; e-mail: pasha-m@ukr.net

2. Yuriy Lakhtin – Doctor of Medicine, Associate Professor, Sumy State University; address: Ukraine, Sumy city; e-mail: sumystom@yandex.ru

3. Lidiya Karpez – Candidate of Medicine, Assistant, Kharkiv Postgraduate Medical Academy, address: Ukraine Kharkiv city; e-mail: karpez63@mail.ru