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Key words: primary chronic periodontitis, secondary chronic periodontitis, histological structure, ultrastructure.

Received: 14.05.2014
Accepted: 03.06.2014

UDC 616.314.17-036.1-008.811.9-08:615.37

CELLULAR COMPOSITION AND ULTRASTRUCTURE OF PERIAPICAL GRANULATION TISSUE IN PRIMARY AND SECONDARY CHRONIC PERIODONTITIS

The study was performed as the part of research work “Development and introduction of new methods for diagnosis, treatment and prevention of dental caries and its complications, diseases of periodontium and oral mucosa” (state registration number 0110U003018).

ABSTRACT. Background. There are no complete data on the occurrence of bacteria in the outbreak of chronic inflammation a consequence of their high virulence, or the result of a defect of local mechanisms of immune protection. To answer these questions, as well as to evaluate the nature, severity changes periapical tissues of the tooth and the activity of the inflammatory process in the apex of the tooth root is possible only during the morphological study of biopsy material. **Objective.** The aim of this work was to study the cellular composition and ultrastructural features of the granulation tissue formed during the current the primary and secondary apical periodontitis. **Methods.** There were included in the histological examination of the teeth 78, who underwent resection of the apex, followed by a fence of histological material. For ultrastructural studies of granuloma periodontal tissue samples were fixed with 2.5% glutaraldehyde solution, material embedded in Epon-812 («SPI-Pon™ 812 Epoxy Embedding Kit», USA). The study was conducted using a transmission electron microscopy. **Results.** In the development of destructive periodontal inflammation are actively involved both specific and non-specific mechanisms of immunity. **Conclusion.** In primary periodontitis granulation tissue contains a moderate amount of white blood cells of various types, as well as single macrophages and plasma cells with reduced functional activity. In secondary periodontitis granuloma contains numerous mononuclear macrophages, plasma cells and giant multinucleated cells with increased activity, which corresponds to the morphological picture of the formation of immune granulomas.

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Citation:

Gritsenko PI, Petruk NS, Samoylenko AV, Tverdokhlebo IV. [Cellular composition and ultrastructure of periapical granulation tissue in primary and secondary chronic periodontitis]. Morphologia. 2014;8(2):14-9. Russian.

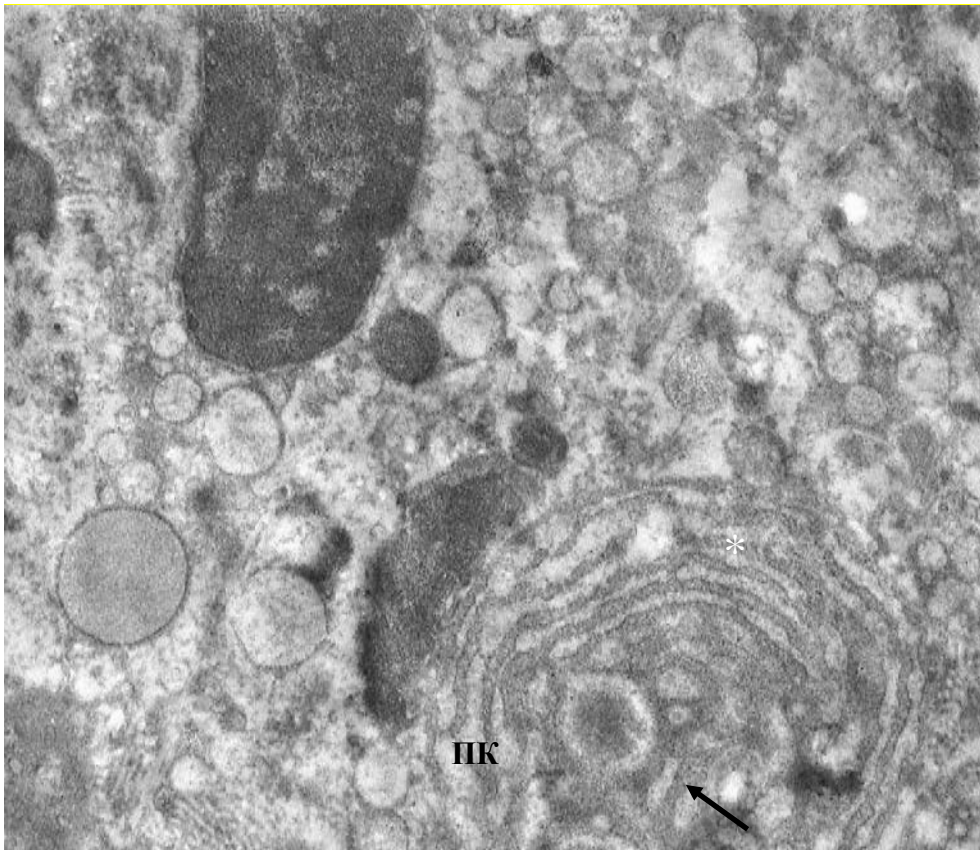


Fig.1. Plot of the plasma cell (ПК) within the periapical granuloma in patients with primary chronic granulomatous periodontitis. Low activity of the nucleus, insignificant osmiophily of "light court" (arrow). Moderate synthetic activity of granular reticulum. x8000.

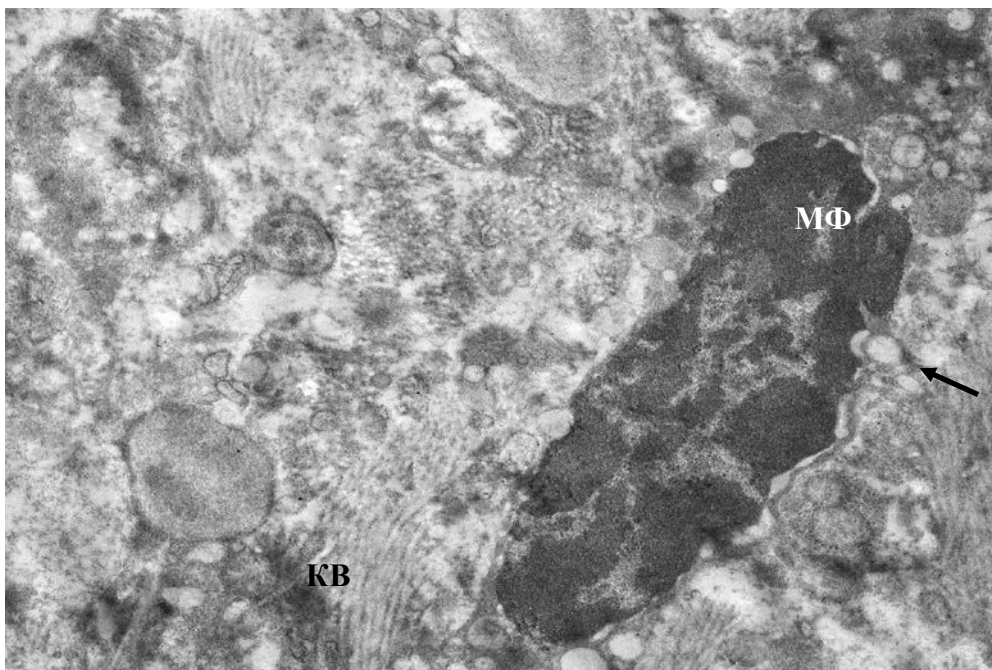


Fig.2. Lysosomes (arrow) in the cytoplasm of macrophage (MΦ) bordering the collagen fibers (KB) of granulation tissue in patient with primary chronic granulomatous periodontitis. x8000.

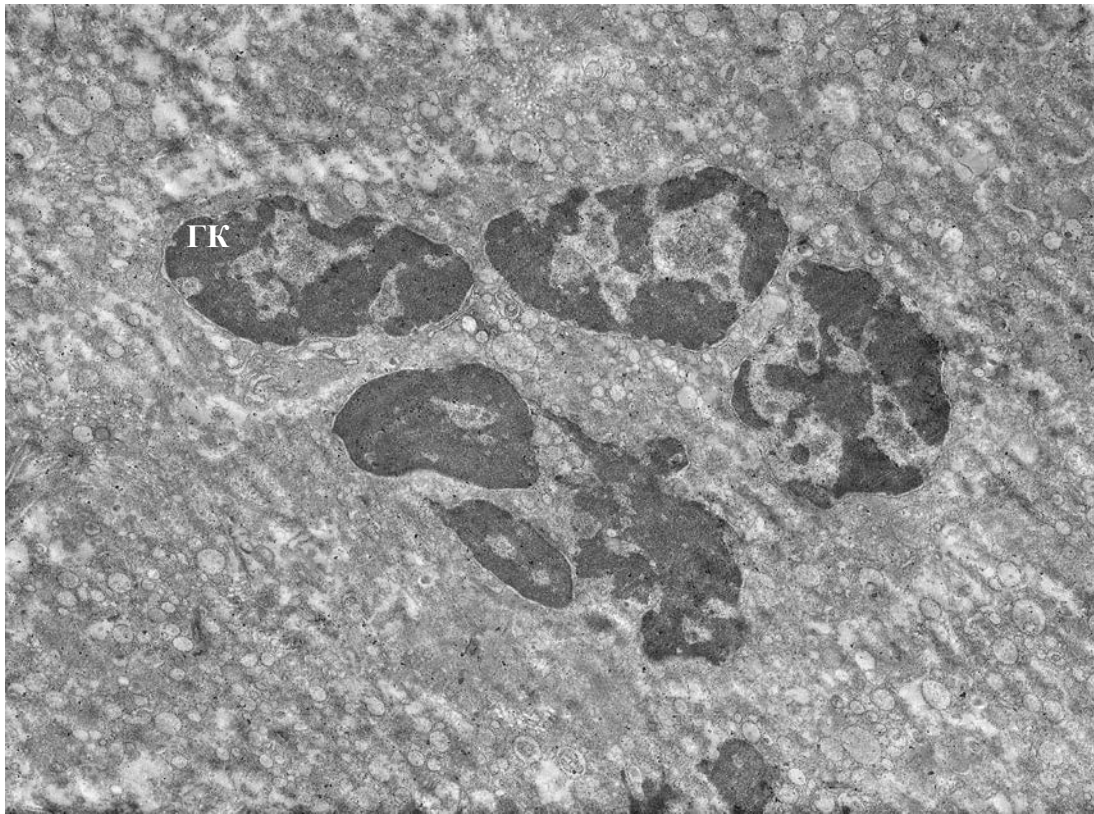


Fig.3. Giant multinucleated cell in the composition of periapical granuloma in patient with secondary chronic granulomatous periodontitis. $\times 4000$.

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