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INFLUENCE OF URINARY TRACT INFECTION ON INFILTRATION OF BLADDER TUMORS BY IMMUNE CELLS

The study was performed as a part of research work “Studying the influence of inflammatory process on origin and development of cancer in the organs of genito-urinary system” (state registration number 0103U002379).

ABSTRACT. Background. Tumor-infiltrating immune cells have been associated with outcomes in various tumors, including urothelial carcinoma. It is supposed that the accompanying urinary infection can influence the local immunity activity, leading to changes of features of bladder tumor course. **Objective** of the research was studying of the urinary tract infection influence on an infiltration of a tumor with immune cells. **Methods.** Immunohistochemical research of CD3+, CD4+, CD8+, CD20+, CD68+ markers expression in tumor specimens, received from 44 patients with a bladder cancer was made. The patients were divided on two groups in conformity with absence (I) or presence (II) of urinary tract infection. **Results.** It is established that in group I specimens 96,0±4,9 % CD3+, 98,6±0,9% CD4+, 82,6±12,6% CD8+ and 78,7±9,29% CD68+ immunocytes were revealed in stromal compartment of tumor, while in group II - 97,0±2,1%, 98,3±0,8% и 84,4±13,1% and 81,9±6,2% respectively. The difference was not statistically significant ($p>0,05$). CD20+ cells were revealed only in stromal compartment of tumor, and they formed foci in group II specimens ($p>0,05$). **Conclusion.** T-cells are prevailing among immunocytes, infiltrating a superficial bladder cancer. In stromal compartment prevail CD4+, while in epithelial - CD8+ T-lymphocytes and CD68+ macrophages. The accompanying urinary tract infection had no statistically significant influence on intensity and selectivity of infiltration of a tissue of tumor with CD3+, CD4+, CD8+, CD68+ immunocytes. The significant augmentation of infiltration of the stromal compartment of tumor with CD20+ B-lymphocytes with formation of lymphatic follicles in patients with urinary tract infection, can be an element of a chronic interstitial inflammation.

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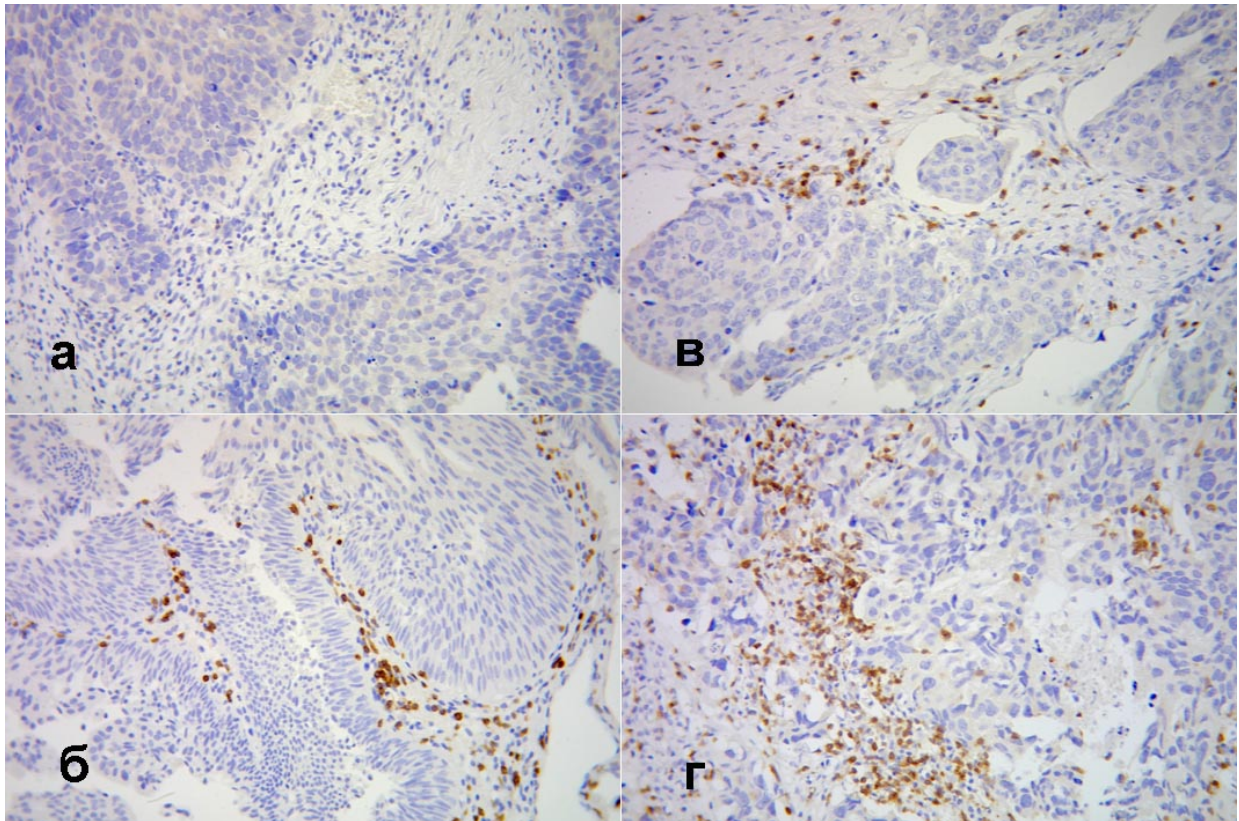


Fig. 1. Cancer of bladder. Severity of tumor infiltration by immune cells (CD3+). Immunohistochemical reaction, additional staining with Mayer's hematoxylin. $\times 100$.

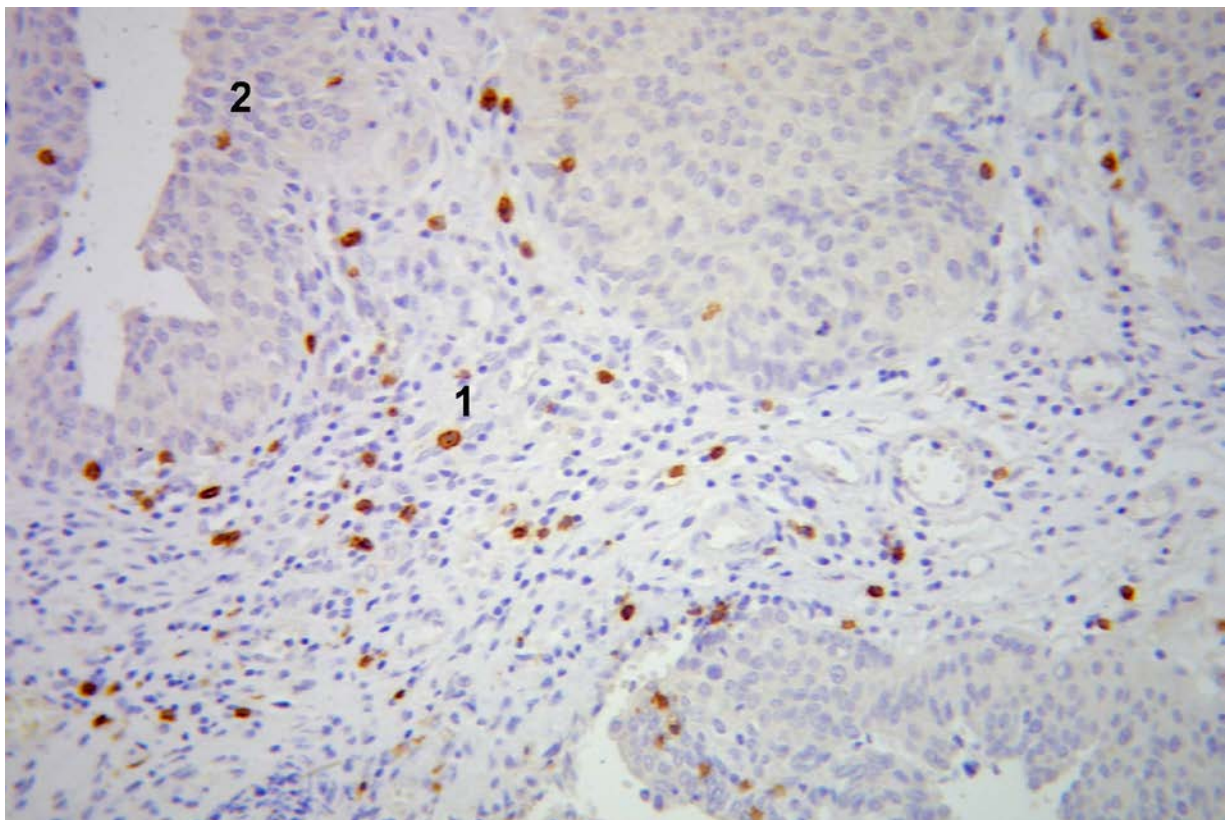


Fig. 2. Cancer of bladder. CD8+ lymphocytes in stromal (1) and epithelial (2) parts of the tumor. Immunohistochemical reaction, additional staining with Mayer's hematoxylin. $\times 200$.

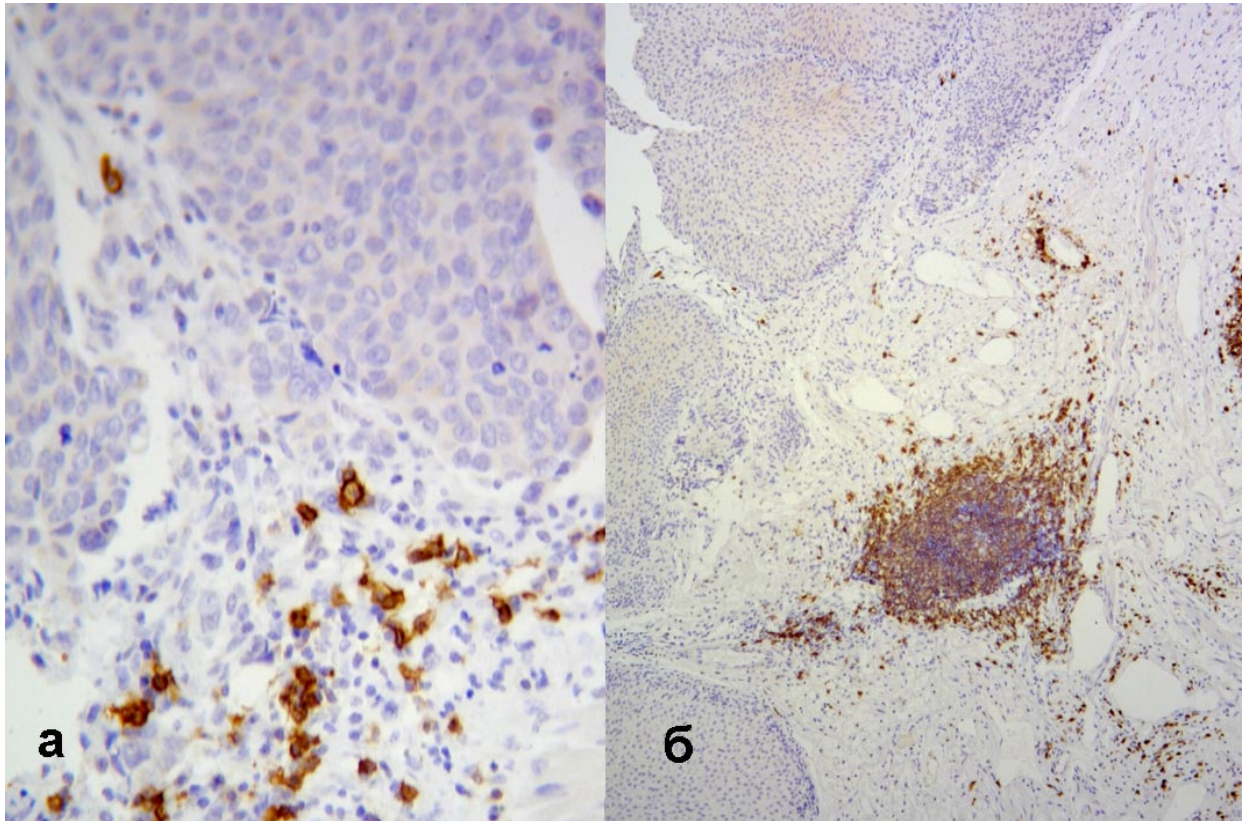


Fig. 3. Cancer of bladder. CD20+ cells in tumor stroma (a) (×400), formation of lymphoid follicles (b) (×100). Immunohistochemical reaction, additional staining with Mayer's hematoxylin.

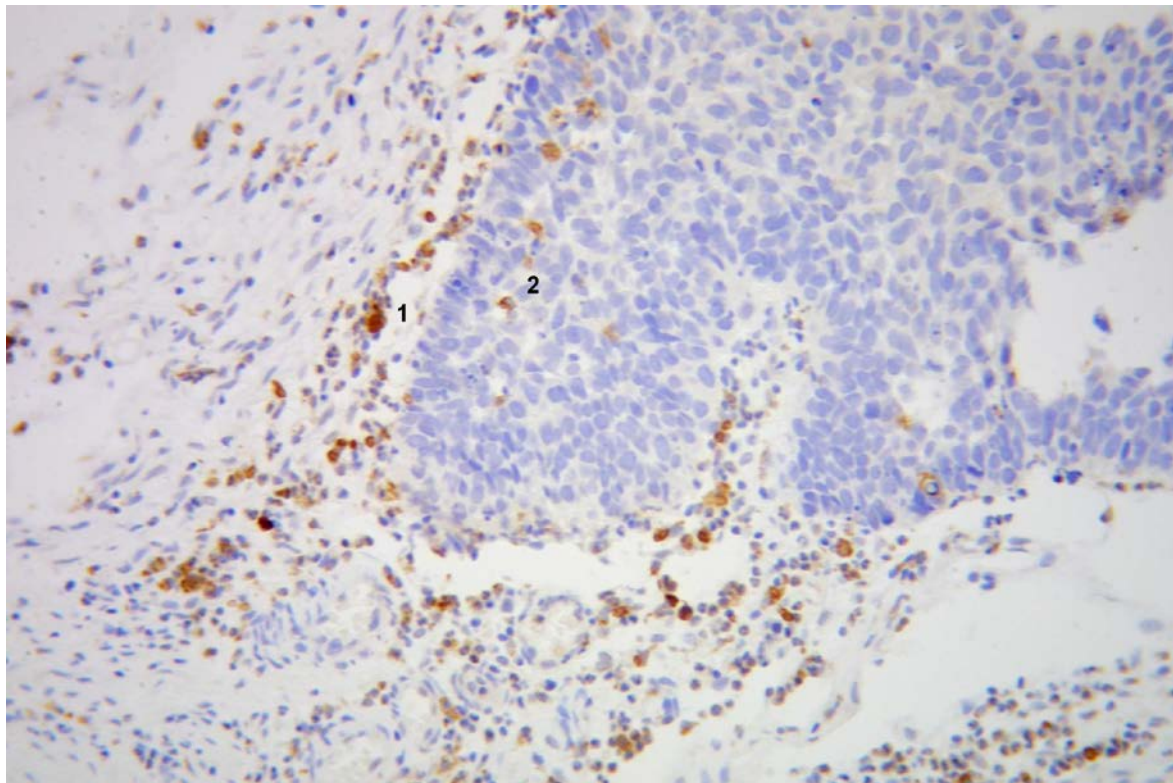


Fig. 4. Cancer of bladder. CD68+ cells in tumor stroma (1), in epithelium (2). Immunohistochemical reaction, additional staining with Mayer's hematoxylin. ×400.

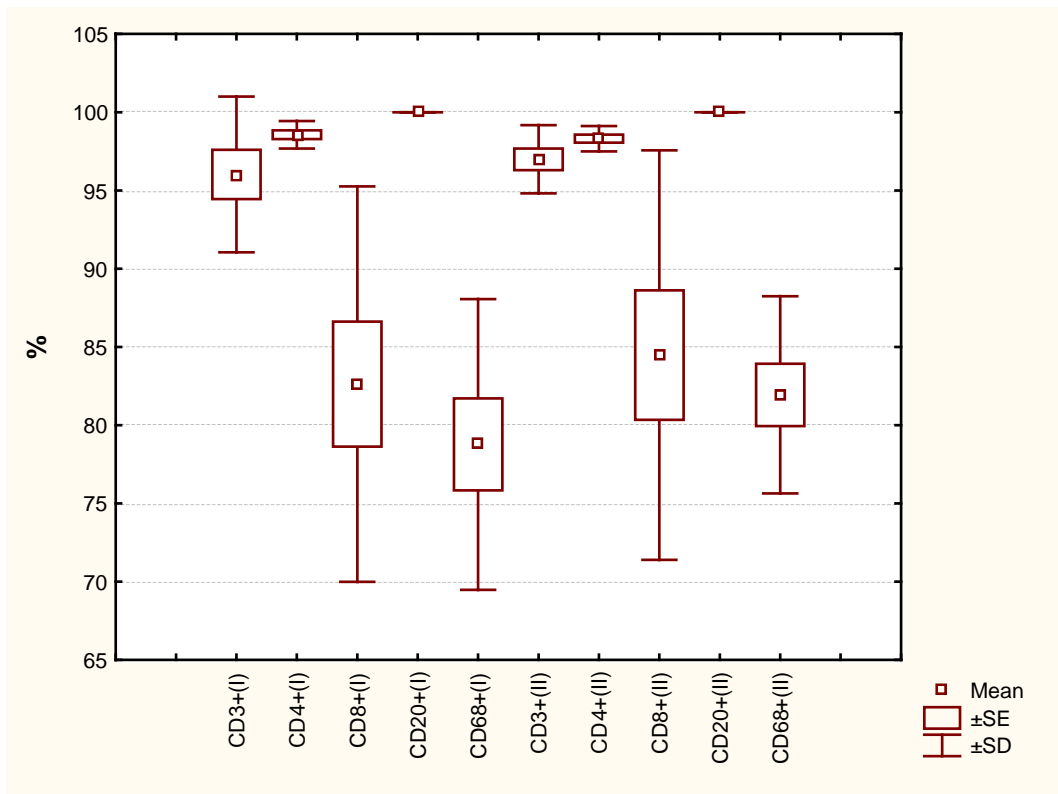


Fig. 5. Content of immune cells in tumor stroma (%). Note: Mean – mediana (M), SE – standard error, SD – standard deviation (m).

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