

R.N.Molchanov
I.S.Shponka

State establishment
“Dnipropetrovsk
Medical Academy of
Health Ministry of
Ukraine”

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IMMUNOHISTOCHEMICAL ASSESSMENT OF BLADDER CANCER ON THE BACKGROUND OF THE CHRONIC INFLAMMATION

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. The effect of chronic inflammation caused by uropathogenic strains of bacteria on bladder cancer is a little-studied subject. **Objective** of the research was to investigate the interrelationship between the expression of CD95, p53, Ki-67, Bcl-2, BAX, E-cadherin, β -catenin COX-2, eNOS, iNOS markers and the presence of concomitant urinary tract infection. **Methods.** Tumor specimens taken from 44 patients with superficial bladder cancer were divided in two groups according to the absence (I) or presence (II) of urinary tract infection. The level of markers expression was detected with the help of immunohistochemical methods. Specimens of bladder wall from 8 patients with benign prostate hyperplasia were used as a control. **Results.** Statistically significant increase of p53, Ki67 expression and decrease of CD95, BAX, E-cadherin and β -catenin expression in tumor tissue comparing with the control was found ($p < 0,05$). It is established that in the group I specimens expression of iNOS ($1,0 \pm 0,87$) in tumor tissue was less pronounced than in group II ($1,95 \pm 0,57$) ($p < 0,05$). Presence of strong positive correlation between p53 and Ki67, bcl-2 and BAX expression in group I; bcl-2 and Ki67, BAX and β -catenin expression in group II were revealed ($p < 0,001$). **Conclusions.** Decrease of apoptotic activity and adhesive properties, increase of proliferation of urothelium are typical characteristics of bladder cancer. Increase of the expression of iNOS on the background of the inflammatory process may be evidence in favor of the negative effects of inflammation on the course of cancer. The difference in interrelationships between the levels of apoptotic and proliferation markers expression in group I and II evidence changes of their interaction and can be the reason of unusual tumor development on the background of inflammatory process.

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✉ rob_molch@yahoo.com

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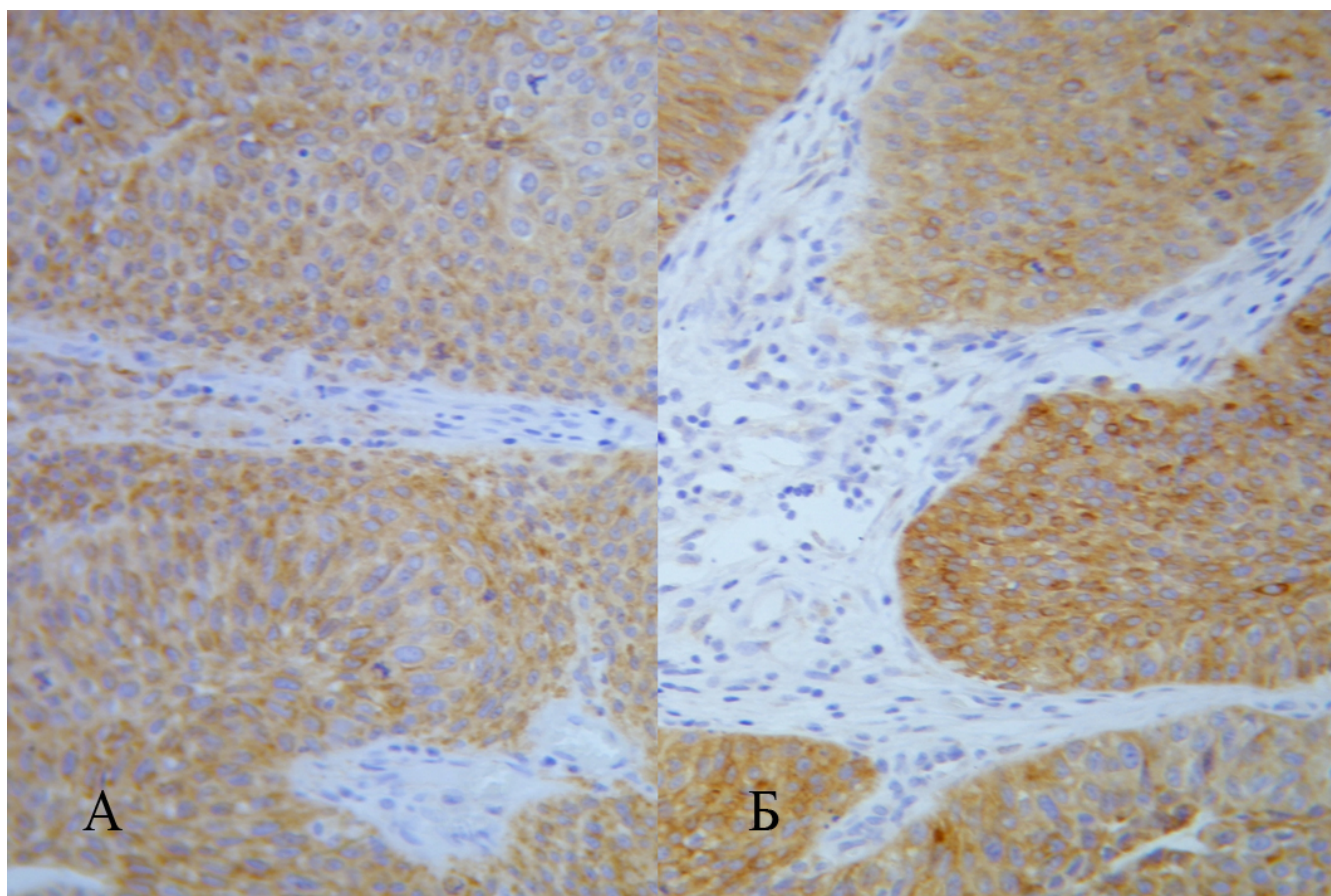


Fig.1. Urinary bladder carcinoma. COX-2-positive cells in tumor stroma and epithelium with concomitant inflammation (A) and in the epithelium without inflammation (Б). Immunohistochemical reaction, additional staining with Mayer's hematoxylin. x200.

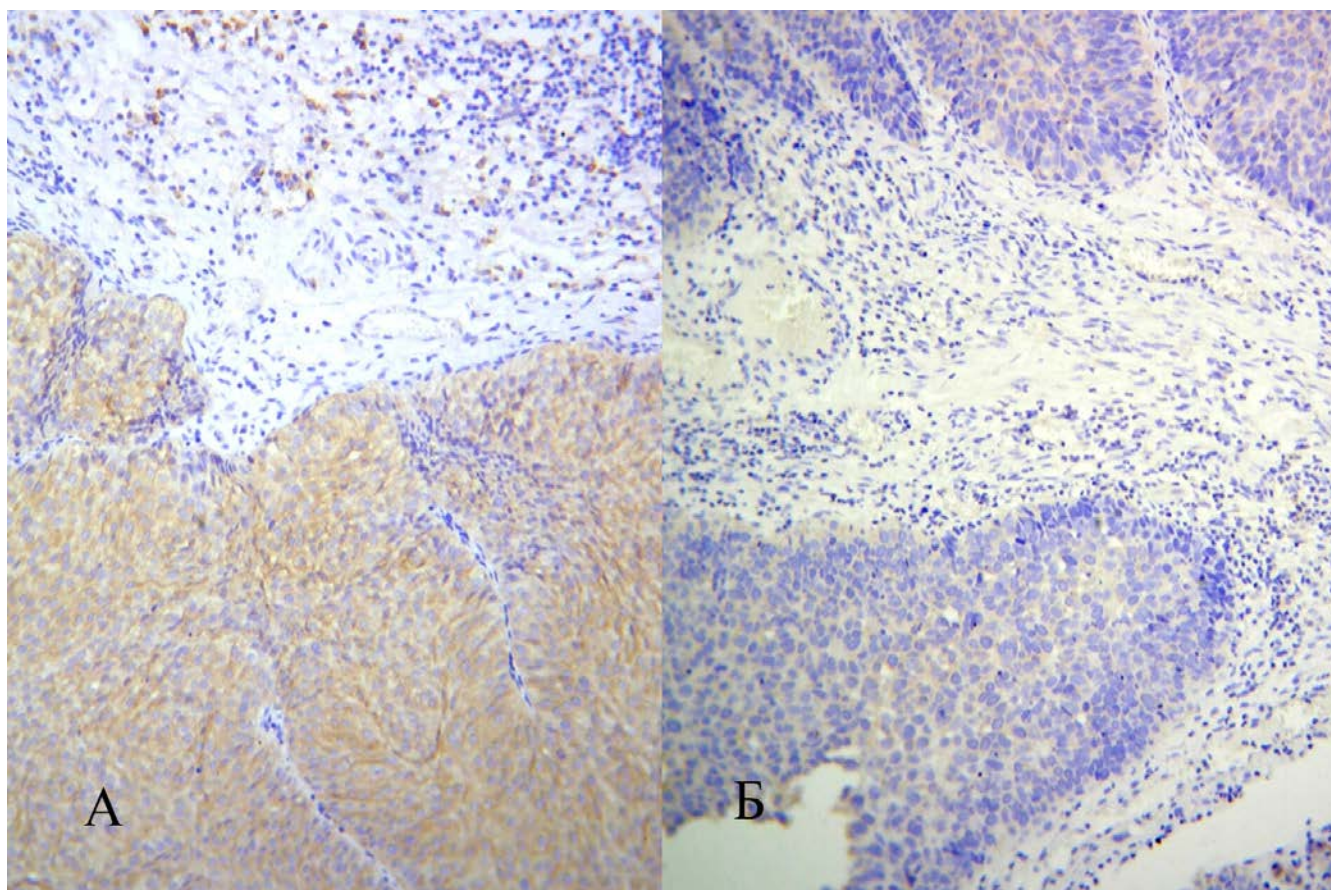


Fig. 2. Urinary bladder carcinoma. iNOS-positive cells in tumor stroma and epithelium with (A) and without (B) concomitant inflammation. Immunohistochemical reaction, additional staining with Mayer's hematoxylin. $\times 100$.

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