

Comparative analysis of relapsing bladder urothelial cancer

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Bladder cancer is a problem in the practice with the high percentage of relapsing. At microscopic level, there are no objective criteria for evaluation of the tendency for local relapsing. In this regard, possible signs could be derived from the peculiarities of the stroma. Stromal reaction, manifested by inflammatory infiltration in the tumor is referred to the biological behaviour of the cancer, with special attention to the presence of eosinophil leukocytes. The present study was carried over 156 cases of primary cancers. Tumor-associated tissue eosinophilia (TATE) was traced at the initial foci of 78 cases with recurrent cancer and compared to the same number of cases without relapsing, matched for gender and age. The cases that relapsed in the future contained statistically significant greater numbers of eosinophils in the primary cancer. These results suggest that TATE may be one of the probable prognostic signs for local relapsing of urothelial cancer.

Key words: cancer, recurrency, stroma, TATE

Introduction

Tumors of bladder consist of 90-95% of all neoplasms in the urogenital system. Their frequency is 12,4:100 000 people (1).

Bladder cancer represents a problem in the clinical practice with the high percentage of relapsing, even in high-grade cancer. At microscopic level, there are no convincing objective criteria for evaluation of the tendency for local relapsing, invasion in the wall and/or metastases. In this regard, possible signs could be derived from the peculiarities of the stroma, such as presence of eosinophil leukocytes, mast cells, lymphocytes, plasmocytes, fibroblast and myoepithelial cells. Increased numbers of eosinophil leukocytes is described in many malignant tumors and their presence is considered either with good or poor prognosis in the different cancer locations. The exact role of these cells in the anti-tumor immunity is not clear. Their activity is connected with: secretion of cytotoxic proteins (2); and basal membrane damage by eosinophil-derived cation proteins and peroxidase (3). Thus, products released by eosinophils interfere in the majority of processes of tissue remodeling, including the biological behaviour of tumors (4).

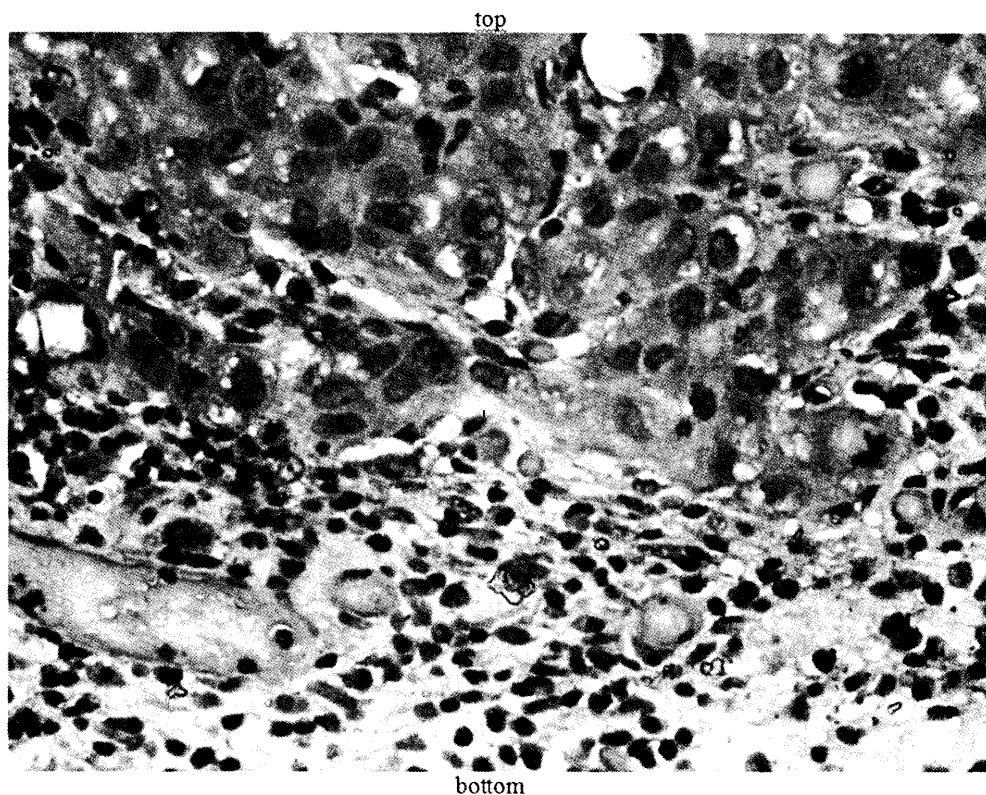


Fig. 1. Case № 30, 65 year old man with urothelial carcinoma High Grade: abundant eosinophilis in the stroma, around the tumor nests, XE, original magnification x20.

Aim

The aim of the present study is to evaluate the significance of tumor-associated tissue eosinophilia (TATE) by comparing the presence of eosinophils in two groups of primary urothelial cancers; relapsing and without relapsing.

Methods and materials

A retrospective analysis for a period of 5 years (2007-2011) was performed. Bladder cancer was diagnosed in 632 patients – out of them 78 developed relapsing tumor for a mean period of six months. TATE in this patients was compared to control group of non-relapsing tumors of 78 patients, matched according to gender and age. All observations were performed on hematoxylin-eosin stained sections of the paraffin blocks from the archive. Non-parametric analysis was used to evaluate the data.

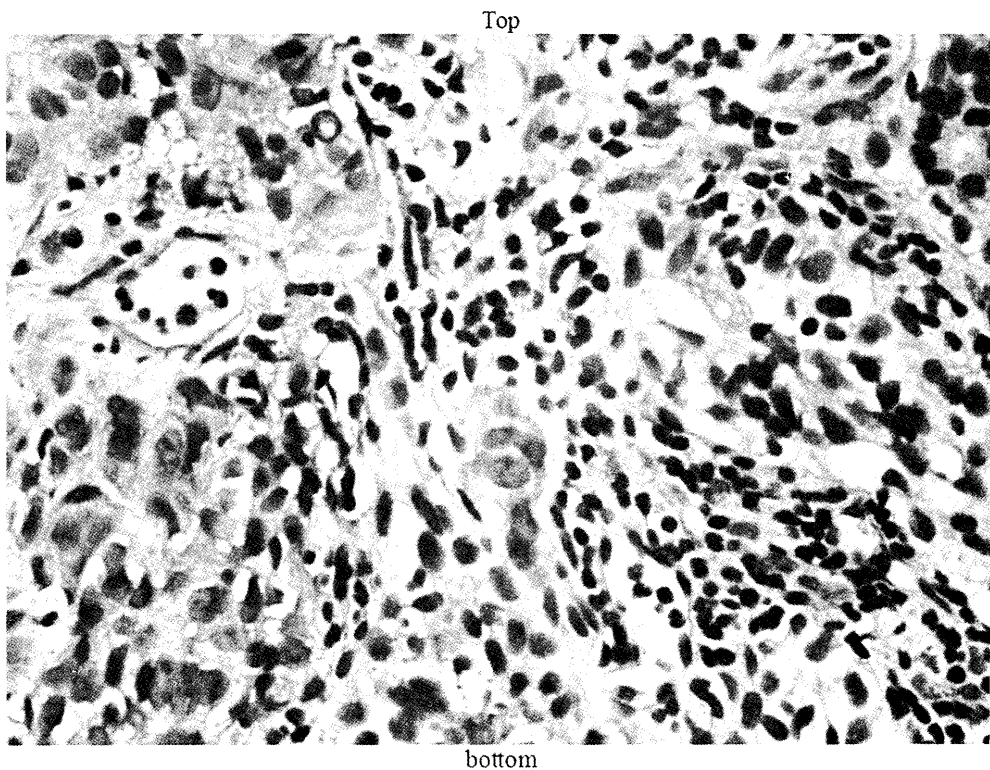


Fig. 2. Case № 60, 57 year old man with urothelial carcinoma High Grade; without eosinophil leukocytes in the stroma reaction around the tumor nests, XE, original magnification x20

Results

TATE was considered as positive when eosinophils were present in the stroma of the bladder cancer (Fig 1) and as negative when no eosinophils were seen (fig 2) TATE was established in 52 patients of the relapsing group, versus 31 of the controls (table 1).

Table 1. Distribution of tissue eosinophilia in primary urothelial carcinomas outbreaks with and without subsequent relapse.

$\chi^2 = 23,26$ $p < 0,001$	Without TATE	With TATE	Total
Recurrency	17	47	78
Non-recurrency	61	31	78
Total	78	78	156

Conclusions

The findings show that cases that relapsed in the future contained statistically significant greater numbers of eosinophils in the primary cancer, compared to the control group. These results suggest that TATE may be one of the probable prognostic signs for local relapsing of urothelial bladder cancer.

References

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