STRUCTURE OF THE INITIAL LYMPHATICS OF THE HUMAN
URINARY BLADDER WITH INVASIVE UROTHELIAL TUMORS

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ABSTRACT

The ability of urothelial tumors of the urinary bladder to metastasize via the lymphatic circulation and the extent of metastatic involvement of regional lymph nodes is an important parameter in the staging and prognosis of these neoplasms. Accordingly, we examined the site and morphology of initial lymphatic vessels in the mucosa of the human urinary bladder in patients with invasive transitional cell carcinoma. Lymphatics in the papillary tumor mass was also examined. Endoscopic transurethral biopsies from the urinary bladder of 120 patients with invasive transitional cell papillary carcinoma were utilized for this study. Biopsy from the uninvolved lateral wall of the same patient was utilized as a control. On histopathology of biopsies of neoplastic tissues, initial lymph vessels were seen in the deeper region of the mucosa but not in the subepithelial layer nor in the stroma of the tumoral papillae. The latter were often associated with arteriolar and venular vessels. When edema and inflammation occurred in peritumoral regions, lymphatics showed a dilated lumen, non-indented wall with dissociated perivascular collagen and elastic fibers. Tumoral permeation or embolization of lymphatics was seen in 12% of patients with invasive tumors, and these lymphatic vessels did not display significant morphologic changes. The absence of initial lymphatics in the stroma of tumoral papillae and in infiltrated subepithelial regions of the urinary bladder may explain the absence of lymph node metastasis in early-stage invasive urothelial tumors.