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Management of Superficial Transitional Cell Carcinoma of the Bladder

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Management of Superficial Transitional Cell Carcinoma of the Bladder

Badrinath R. Konety, MD, MBA

INTRODUCTION

Bladder cancer is the fourth most common cancer in men in the United States and the eighth most common cancer in women.[1] An estimated 56,500 patients will be diagnosed with the disease in 2002, and 12,600 will die of the disease.[1] Transitional cell carcinoma (TCC) accounts for 90% to 95% of cases, and adenocarcinoma and squamous cell carcinoma comprise the remaining cases.[2] The occurrence of incidentally discovered bladder cancer at autopsy is virtually zero, indicating that most bladder cancers come to clinical detection during the patient's lifetime.[3] A majority of tumors are superficial (stage Ta, T1, or Tis) at the time of initial diagnosis.[4] This review considers issues related to the diagnosis and management of superficial TCC of the bladder.

INITIAL EVALUATION OF BLADDER TUMORS

CASE 1 PRESENTATION

Patient 1 is a 67-year-old man with a history of recurrent TCC of the bladder who presents for routine surveillance cystoscopy. He has previously undergone treatment with intravesical thiotepa, doxorubicin, and bacillus Calmette-Guérin (BCG). His last tumor recurrence was more than 6 months ago. At the current examination, his urine cytology is positive for the presence of malignant cells, and cystoscopy reveals a sessile bladder tumor. Upon resection, the tumor is found to be high grade with invasion into the lamina propria (**Figure 1**, *page* 7). There are some slips of muscle present in the lamina propria. The patient's three prior bladder tumors have been stage Ta high grade, stage Ta high grade, and—most recently—stage T1 high grade. The most recent prior tumor was multifocal, with one tumor located at the bladder neck.

- **What is the clinical stage of patient 1's current bladder tumor?**
- **What procedures should be performed at this point to further assess patient 1's disease?**

STAGE AND GRADE CONSIDERATIONS

Staging of TCC

Accurate determination of the stage and histologic grade of bladder tumors is a critical aspect of evaluation because these factors have a significant impact on management and prognosis. The normal bladder epithelium consists of 2 to 6 layers of transitional cells. The lamina propria, which underlies the basement membrane of the epithelium, is a connective tissue layer that also has slips of smooth muscle within it, called *muscularis mucosae,* which is different from the muscularis propria of the bladder wall, which lies below the lamina propria (**Figure 2**).

Staging of bladder cancer is based on the extent of penetration of the tumor into the wall of the bladder (**Table 1**). Pathologic staging performed on a specimen obtained by transurethral resection of bladder tumor (TURBT) can underestimate the true histologic extent of disease by 30% to 35% as demonstrated by repeat TURBT.[5,6] Understaging by TURBT is more likely in higher grade tumors, as evidenced by the stronger association between higher histologic grade and infiltration of detrusor muscle in specimens examined at cystectomy compared to the assessment at TURBT.[7] Previous studies have demonstrated that repeat TURBT can alter treatment decisions in up to 33% of patients owing to reassignment of stage.[8] Repeat TURBT would be particularly useful in precise staging of patients with no muscle found in the specimen from the initial resection.

Histologic Grade of TCC

Histologic grade of TCC is assigned based on cellular morphologic characteristics, including nuclear-cytoplasmic ratio, presence of nucleoli, and cellular

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