

**UROTHELIAL NEOPLASMS IN PEDIATRIC AND YOUNG ADULT PATIENTS: A LARGE SINGLE-CENTER SERIES**

James Saltsman, Marcus Malek, William Hammond, Michael La Quaglia  
*Memorial Sloan Kettering Cancer Center, New York, NY, USA*

**Aim of the study:** Bladder cancer is the sixth most common cancer in the United States; however, it is exceedingly rare in pediatric patients, leading to a lack of accepted standards for diagnosis, treatment, and surveillance. The present study describes our institutional experience with bladder urothelial neoplasms in pediatric and young adult patients.

**Methods:** After obtaining IRB approval, the surgical pathology records at our institution were searched for cases of urothelial carcinoma, papillary urothelial neoplasm of low malignant potential (PUNLMP), or urothelial papilloma among patients 25 years of age, treated between January 2000 and September 2016. Medical records of all patients were reviewed. Cases submitted exclusively for pathology review were excluded. Diagnoses were confirmed based on pathologic examination using the 2004 World Health Organization classification system.

**Main results:** In total, 34 patients were identified with a mean age of 20.4 years (range 8-25 years) and a mean follow-up of 45.8 months (1-187 months). The male to female ratio was 1:83.1. The most common presenting symptom was hematuria, present in 79% of patients (n=27). Three patients were diagnosed with invasive urothelial carcinoma, 24 with noninvasive urothelial carcinoma, 6 with PUNLMP, and 1 with urothelial papilloma. All noninvasive lesions were resected by cystoscopy after which 12% (n=4) experienced severe complications (grade III or greater). One death was recorded in a patient with stage IV invasive disease at diagnosis and 2 patients developed recurrences. Of those with noninvasive carcinoma, 29% (n=7) required repeat cystoscopy soon after initial TURBT at outside institutions, and 17% (n=4) had tumor downgraded from high-grade to low-grade after pathology review.

**Conclusion:** Hematuria is the most common sign of bladder neoplasia in this age group and should be investigated by cystoscopy. The majority of pediatric urothelial neoplasms are noninvasive lesions that can be treated by transurethral resection with favorable outcomes.