ABSTRACT

Retrospective data from our institution's cytology unit were collected for all reviewed urine cytologic specimens between 1995 and 2010. Relevant patient medical records were subsequently accessed, and all cytologic and histologic data were collected with a minimum 2-year follow-up. Clinical and pathologic variables that were examined included the date of collection, reason for urinary evaluation (first presentation of hematuria, surveillance for known hematuria or urothelial tumors, and others), type of specimen (voided, washing, or catheterized). A total of 191 urinary specimens (representing 171 patients) from patients 1-18 years of age were identified. The cytologic and follow-up clinical data was systematically analyzed and correlated.

RESULTS

The median age was 9 years (range, 3 months-17 years) with a gender distribution of 112 male and 59 female (M:F=2:1). Most common presenting symptom was hematuria, followed by frequency. The largest diagnostic group consisted of benign/normal cytopathologic findings (88%) or displayed acute inflammation (21%), reactive changes (24%), and hematuria (40%). Crystals were identified in 2% of cases and polyoma virus features were present in 1.6%. One case was suspicious for malignancy while 21 cases were called atypical based largely on architectural atypia. A total of 11 cases had surgical follow-up. The great majority of these (55%) had urinary calculi. One benign neoplastic case (papilloma) was identified, while 2 cases progressed to end stage renal disease. Thirteen cases with atypia were not followed by either repeat urines or surgical biopsies. No urothelial neoplasms were identified by urinary cytology in the study group.

CONCLUSIONS

• A large majority of urinary specimens in pediatric age group are benign, display reactive changes or hematuria. Urothelial neoplasms are a rarity in the pediatric age group and were identified in only 1 case in our study group (papilloma).
• Cytologic atypia in pediatric age group is an uncommon category, and not associated with cancer follow-up. Majority of cases with atypical diagnosis in pediatric age group are benign, with no need for follow-up repeat urines or tissue biopsies.

REFERENCES