

Rare Renal Repercussions of a Rhabdomyosarcoma

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Rhabdomyosarcoma tumors comprise only 3 to 4 percent of all pediatric cancers.

Abdominopelvic rhabdomyosarcomas can cause urinary changes or constipation due to mass effect on the urinary and intestinal tracts; thus, they can be challenging to differentiate from other diagnoses.

An 11-year-old male presented with the chief complaint of constipation and lower abdominal pain for a few days. The patient reported difficulty urinating for a week. The patient's parents also noted recent weight gain. Physical exam revealed hypertension and marked lower abdominal distension. A firm tender mass was palpated in the abdominal and pelvic regions. A CT of the abdomen and chest revealed a large mass in the abdominopelvic area as well as multiple small nodules bilaterally in the lungs. These findings raised concerns for neoplasia with pulmonary metastases. A surgical biopsy was performed on the abdominal mass and showed a primitive malignant neoplasm with rhabdomyoblastic differentiation.

Hours after the surgical biopsy was performed, physical exam showed newly discovered right lower extremity edema and scrotal swelling. Within a day, the patient's body weight increased by 4.6 kg and his creatinine reached 3.99, suggesting acute kidney injury (AKI) with renal dysfunction. A renal ultrasound revealed bilateral hydronephrosis secondary to tumor compression of the ureters prompting bilateral nephrostomy tube placement. He was then transferred to the PICU for emergent chemotherapy.

The patient's blood pressure rose to 136/105 (>99th percentile), and anti-hypertensive therapy was initiated. Two days after his nephrostomy tube placement, his creatinine level and lower extremity edema rapidly improved and a post obstructive diuresis ensued, requiring aggressive fluid replacement in the following days. His blood pressure and weight began to normalize. Upon discharge, the patient had normal vitals, adequate urine output from bilateral nephrostomy tubes and one void via his urethra daily. He will continue chemotherapy treatment for the rhabdomyosarcoma and his abdominal mass will be monitored.

This case describes a unique presentation of rhabdomyosarcoma. The tumor was in the abdominopelvic region, causing hypertension with bilateral hydronephrosis and postrenal AKI secondary to compression of the ureters. This complex presentation required a multispecialty approach and a variety of treatments for successful management.