History
6 year old female with abdominal pain.

Diagnosis
Metastatic Wilms Tumor

Additional Clinical
Previous left nephrectomy for Wilms tumor.

Discussion
Wilms tumor, clear cell sarcoma and rhabdoid tumor account for about 6% of pediatric neoplasms with Wilms tumor being by far the most common. While renal tumors do accumulate FDG, the utility of PET/CT in the evaluation of renal tumors is somewhat limited. Conventional anatomic imaging is usually adequate for diagnosis and staging. Renal excretion of FDG can impede visualization of small renal tumors and perinephric spread.

Wilms tumor (nephroblastoma) is derived from pleuripotent metanephric blastema and is the most common renal neoplasm in children. It is strongly associated with aniridia, hemihypertrophy and genital malformations and occurs in conjunction with neurofibromatosis, Beckwth-Weidemann syndrome, Drash syndrome, and nephroblastomatosis. Peak incidence occurs between 2 and 3 years of age. Wilms tumors are often round and confined by an inflammatory pseudocapsule, although occasionally Wilms tumors are multicentric and/or bilateral. Tumor penetration through the pseudocapsule into lymphatics, blood vessels and renal sinus results in local spread. Lung and liver are the usual sites of metastasis with other sites being very uncommon.

PET/CT may have a role in problem solving in the assessment of renal malignancies in children. Currently, experience is limited, however, PET/CT may be helpful in differentiating nephroblastomatosis from multicentric Wilms tumors. In this case, PET/CT was helpful. The absence of other metastatic disease limited the surgery and guided chemotherapy.

Findings
PET/CT-Axial images show marked F-18 glucose avidity in the heterogeneous mass occupying the left renal fossa. No other anatomic or metabolic disease was seen.

Reference
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