

Renal Parenchymal Neoplasms

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Nephroblastoma (Wilms tumor):

- Nephroblastoma, also known as Wilms tumor.
- is the most common solid renal tumor of childhood, accounting for roughly 5% of childhood cancers.
- The peak age for presentation is during the third year of life.
- there is no sex predilection.
- Wilms tumor occurs in familial and nonfamilial forms.

Pathogenesis & Pathology

The typical Wilms tumor consists of **blastemal**, **epithelial**, and **stromal** elements in varying proportions. A fibrous pseudocapsule is occasionally seen.

Tumor dissemination can occur by direct extension through the renal capsule, hematogenously via the renal vein and vena cava, or via lymphatic spread.

Metastatic disease is present at diagnosis in 10–15% of patients, with the lungs and liver are the most common sites of involvement.

INVESTIGATIONS

Urinalysis may show evidence of hematuria, and anemia may be present. **Abdominal US** and **CT scanning** are performed initially to evaluate the mass. **Abdominal MRI** can sometimes be useful but is otherwise not routinely indicated. **Chest x-ray** remains the initial examination of choice to evaluate for the presence of lung metastases.

Preoperative **biopsy** is indicated in tumors for which preoperative chemotherapy or radiation therapy is planned.

Treatment

A. SURGERY

For patients with **unilateral** kidney involvement whose tumors are surgically resectable , radical nephrectomy is the procedure of choice.

A child with **bilateral** Wilms tumor, can frequently be managed with preoperative chemotherapy followed by renal-sparing surgery (partial nephrectomy).

B. CHEMOTHERAPY

Wilms tumor has been long recognized as a chemosensitive neoplasm. Various chemotherapeutic agents can be used according to tumor stage and status.

C. RADIATION THERAPY

Wilms tumor has long been recognized as a radiosensitive tumor. Despite the proven efficacy of radiation therapy in children, its use is complicated by its potential for growth disturbances and recognized cardiac, pulmonary, and hepatic toxicities.