

Wilm 's Tumor

Definition

- Nephroblastoma is the most common malignant renal and intrabdominal tumor of childhood

Incidence

- **Peak age of incidence is 2-4 years.**

Etiology

- Arises from a malignant undifferentiated cluster of primordial cells capable of initiating the regeneration of an abnormal structure
- Occur usually in left kidney
- 10% of cases both kidney are involved
- Frequently associated with hemi hypertrophy , Beckwith – wiedemann syndrome or genitourinary anomalies

Clinical Features

- Abdominal mass- firm tender ,non tender ,confined to one side
- Hematuria
- Fatigue /malaise
- HTN (occasional)
- Weight loss
- Fever
- If metastasis symptoms of lung involvement
-dyspnoea , cough , chest pain



Pathophysiology

- Kidneys start to develop before the baby is born,
- when the kidneys cells are not yet differentiated into various mature kidney cells.
- The maturation process of the kidney cells ends around the age of three or four.
- However, this maturation process can be impaired, and some of these undifferentiated cells grow and divide uncontrollably and exaggerated causing tumors to form.

Diagnostic evaluation

- History and physical examination for presence of congenital anomalies ; family history of cancer
- Clinical features

Wilm's Tumor (Nephroblastoma)...cont.

Investigations :

Plain X-Ray. abdominal and chest CTS

514



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516



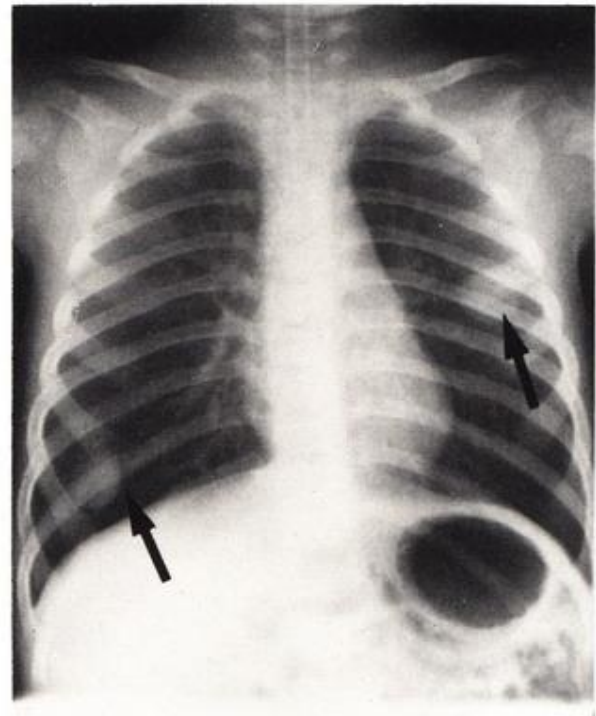
Wilm's Tumor (Nephroblastoma)...cont.

3. Chest X-ray.

520



519



Wilm's Tumor (Nephroblastoma)...cont.

518

4. **Selective Renal angiogram.**
5. **MRI**
6. **Ultrasound.**
7. **Biopsy: In the advanced stage.**
8. **haematological studies**
9. **biochemical studies
/urinalysis**



Management

Combined management of surgery and CT with or without radiation – based on histological pattern and clinical stage.

For **stage I Wilms' tumor**, 1 or more of the following criteria must be met:

- Tumor is limited to the kidney and is completely excised.
- The surface of the renal capsule is intact.
- The tumor is not ruptured or biopsied (open or needle) prior to removal.
- No involvement of extrarenal or renal sinus lymphovascular spaces
- No residual tumor apparent beyond the margins of excision.
- Metastasis of tumor to lymph nodes not identified.

➤ Treatment: Nephrectomy 18 weeks of chemotherapy depending on age of patient and weight of tumor. EG: less than 2 years old and less than 550g only requires Nephrectomy with observation

- **Stage II**

- For Stage II Wilms' tumor, 1 or more of the following criteria must be met:
 - Tumor extends beyond the kidney but is completely excised.
 - No residual tumor apparent at or beyond the margins of excision.
- Treatment: Nephrectomy + abdominal radiation + 24 weeks of chemotherapy

- **Stage III**

- For Stage III Wilms' tumor, 1 or more of the following criteria must be met:
 - Unresectable primary tumor.
 - Lymph node metastasis.
 - Tumor spillage involving peritoneal surfaces either before or during surgery,
 - Treatment: Abdominal radiation + 24 weeks of chemotherapy + nephrectomy after tumor shrinkage
 - Outcome: 95% 4-year survival; 56% 4-year survival if anaplastic

- **Stage IV (10% of patients)**

- Stage IV Wilms' tumor is defined as the presence of hematogenous metastases (lung, liver, bone, or brain), or lymph node metastases outside the abdomenopelvic region.
- Treatment: Nephrectomy + abdominal radiation + 24 weeks of chemotherapy + radiation of metastatic site as appropriate
- Outcome: 90% 4-year survival; 17% 4-year survival if anaplastic

- **Stage V (5% of patients)**

- Stage V : Wilms' tumor is defined as bilateral renal involvement at the time of initial diagnosis
- Treatment: Individualized therapy based on tumor burden

Chemotherapy

- Actinomycin
- Vincristine
- Adriamycin

Wilm's Tumor (Nephroblastoma)...cont.

Prognosis

- ✓ Better than Neuroblastoma.
- ✓ In stage I the cure rate is 90%.
- ✓ Even when there is pulmonary metastasis the 5 year survival is 50% after proper surgery, chemotherapy and radiotherapy.
- ✓ Local recurrence or distant metastasis is rare after the 2nd year.

Stage I



Stage II



Stage III



Stage IV





Nursing management

- **Do not palpate abdomen** , because of the risk of rupturing the protective capsule .
- Excessive manipulation should be avoided because it can cause seeding of the tumour and spread of cancerous cells

Nursing Diagnosis and Planning

- Anxiety related to surgery with nephrectomy

Expected out come :

the child and parents will express decrease anxiety about the outcome of surgery .

- Risk for infection relate dto surgical intervention.

Expected out come :

the child will exhibit no sign and symptom of infection as evidence by normal vital sign ,intact incision site and absence purulent discharge.

- Deficient knowledge related to unfamiliarity with the disease process and treatment plan