Solid Tumor

Hematology and Oncology Center

Pediatric Solid Tumors account for approximately 40 percent of childhood cancers.

Solid tumors are often asymptomatic until the mass is noticeable and palpable. The provider should immediately consult an expert oncologist with the following symptoms.

Symptoms:

NOTE: The symptoms for these soft tissues and sarcomas vary depending on the type of disease, but most often will include one or many of the following:

- Pain at the tumor location
- Swelling or lump at the location
- Numbness
- Tumors in nose may cause congestion, bleeding, or neurological symptoms
- Tumors around eye may cause swelling or bulging of eye, or vision changes
- Tumors in bladder, prostate and urogenital tract may cause difficulty or inability to urinate or stool

Advanced symptoms:

- Fever
- Sweating
- Weight loss
- Broken bone
- Respiratory symptoms if spread to the lung
- Fatigue, decreased exercise tolerance

Types of solid tumors:

- Rhabdomyosarcoma
- Osteosarcoma
- Ewing's sarcoma
- Non-rhabdomyosarcoma soft tissue sarcomas (NRSTS):
  - o Clear cell sarcoma
  - o Undifferentiated sarcomas
  - o Fibrosarcoma
  - o Leiomyosarcoma
  - o Synovial sarcoma
  - o Epitheliod sarcoma
  - o Liposarcoma
  - o Fibroblastic/myofibroblastic tumors
  - o Angiosarcoma
  - o Alveolar soft part sarcoma
- Malignant peripheral nerve sheath tumor
- Desmoid tumors/ myofibromas
- Germ cell tumors
- Ovarian and testicular tumors
- Retinoblastoma
- Melanoma
- Colon and gastric cancers
- DSCRT (desmoplastic small round cell)
- Nasopharyngeal carcinoma
- Adrenal cortical carcinoma
- Neuroblastoma
- Renal tumors
- Liver tumors
- Histiocytic disorders

How can we help with this diagnosis?

- Cook Children's dedicated team of oncologists, surgeons, interventional radiologists, radiation oncologists and support staff works closely together. The team meets weekly to discuss the best care for each child, adolescent and young adult.
- State-of-the-art clinical care is provided to all of our patients through access to current national trials, best evidence-based practices, new experimental therapies and supportive care with all pediatric sub-specialities and psychosocial support teams available.
- Cook Children's is not a traditional academic center affiliated with a university; we are academic in how we approach research and practice day in and day out.
- As a key collaborator with the nation's leading pediatric research organizations, our team offers the best available treatments and contributes to the search for a cure.

Testing and diagnostic:

In order to determine the best treatment, tests must be done to determine what type of solid tumor and staging.

The following test may be done:

- Blood and urine tests
- Sample of the tumor tissue; this can be done with a biopsy or, if possible, resection of tumor
- Depending on type and location, may need bone marrow evaluation and spinal tap (lumbar puncture)
- Images of bodily structures, which can be done with:
  - o X-ray
  - o Computed tomography (CT) scan
  - o Magnetic resonance imaging (MRI) scan
  - o Bone scan
  - o PET scan

For referrals and consults contact:

Hematology and Oncology Center
682-885-4007

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Pearls

- The most common presentation of Wilms tumor in a toddler is a painless mass noted by parent during bath time.
- The first and/or only sign of soft tissue sarcoma may be asymmetry of muscle, extremity or chest wall.
- Rare causes of hypertension include adrenal, renal and neuroendocrine tumors.
- Pelvic masses may have history of chronic constipation and fullness in lower quadrant not improved with stooling.
- Bone tumors and metastatic bone lesions should be considered in children with persistent bone pain or swelling (even if they attribute it to acute or chronic injury) as it may be a pathologic fracture.
- Mediastinal masses can present with dyspnea, cough, chest pain, orthopnea, dysphagia, hoarseness or facial swelling from superior vena cava syndrome.
    - o Discovery of mediastinal mass is medical emergency and no sedation should be given until assessed by team of experts.
    - o Differentials include lymphomas, teratoma, germ cell seminoma, thymoma and neuroblastoma/ganglioneuromas.
- Isolated hemi-hyperplasia or hypertrophy (one side of body or extremity larger than other side) should have genetic evaluation and tumor surveillance program initiated.
- Families with strong family history of cancer may benefit from genetic counseling and genetic testing through our multi-disciplinary oncology genetic clinic.
- Children with genetic mutations or familial syndromes such as Li-Fraumeni syndrome, Beckwith-Wiedemann, Noonan syndrome, Fanconi anemia, ataxia-telangiectasia and PTEN mutations are at increased risk for childhood cancers.
- Incidence of melanoma is increasing in children and adolescents, especially 15-19 year olds.
    - o Melanomas in adults tend to turn darker but melanoma in children often are white, yellow or red and may be misdiagnosed as warts.
- Histiocytic disorders can present in many different ways: solitary or multifocal lytic bone lesions, diabetes insipidus, seborrheic rash, chronic otitis, lymph node and spleen involvement, soft tissue masses, marrow disease or systemic illnesses.
    - o Langerhans Cell Histiocytosis occurs in 1:200,000 children and is likely underdiagnosed as may have no symptoms or symptoms are mistaken for other conditions or injury.

Treatment

After cancer is diagnosed, staging tests are performed to find out if the cancer has spread and, if so, to what extent. Treatment for solid tumors depends on the type, stage and location of the cancer in addition to child's overall health and family goals and preferences. The Solid Tumor Team works together with each patient and their family to determine the best individualized treatment plan. Treatment options may include:

- Chemotherapy
- Surgery
- Radiation therapy/ proton beam therapy
- High dose chemotherapy with stem cell support
- Immunotherapy/antibody therapy
- Targeted therapeutics/precision medicine
- Access to clinical trials, all phases
- Multi-disciplinary cancer predisposition clinic

Cook Direct Connect

682-885-1940

To better serve our treating clinicians, we can assist you with:

- Non-emergent transfer requests
- Direct admissions
- Specialist consultations

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