



Pediatric Clips

Malignancies affecting older adolescents — Emmett H. Broxson, Jr., MD

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Pediatric Clips from The Children's Medical Center are quick reviews of common pediatric conditions.

The Children's Medical Center is the region's pediatric referral center for a 20-county area. As the only facility in the region with a full-time commitment to pediatrics, Children's offers a wide range of services in general pediatrics as well as in 35 subspecialty areas for infants, children and teens. We welcome your inquiries about services available — call 937-641-3666 or e-mail marketing @childrensdayton.org.



All kids need special care — All kids need Children's.

One of America's top 25 children's hospitals — Child magazine, 2003

CASE: ADOLESCENT PRESENTED WITH LEG PAIN

A 16-year-old Caucasian male presented with a three-day history of left hip and upper thigh pain. There was no history of fever, erythema, swelling, trauma or weight loss. On examination he had pain on flexion of the left thigh. There was no erythema or appreciable mass. His laboratory assessment showed a white blood count of 15,000, Hgb of 14.5 Gm/dl and platelet count of 357,000. The differential showed 78% segmented neutrophils, 1% bands, 14% lymphocytes and 7% monocytes. ESR was 138 mm/hr and LDH was 198 (208-274 U/L).

With leg pain such as this, the differential includes trauma, leukemia or lymphoma, malignant or benign bone tumor, malignancy with metastasis, infection or inflammation and thrombosis. A x-ray of the hip and femur suggested a vague soft tissue mass anterior to the upper femur. The mass was confirmed by ultrasound. An MRI showed a heterogeneously enhancing mass, primarily in the vastus intermedius and vastus medialis muscles measuring 8.9 cm vertically, 7.6 cm transversely and 6.9 cm anteroposteriorly. The lesion was biopsied and found to be primitive neuroectodermal tumor (PNET) or extrasosseous Ewing

sarcoma. Further evaluation showed no metastatic disease.

The child was enrolled in a Children's Oncology Group protocol. This is a national study that randomizes children with localized Ewing sarcoma to receive the same chemotherapy every two or three weeks, intensive timing. At 12 weeks, local control measures are accomplished consisting of surgery with or without radiation. This is followed by further chemotherapy. The protocol has guidelines for all phases of care to facilitate comparable care at each institution.

CASE DISCUSSION

This child falls in the age group (15- to 19-year-old) where the incidence of malignancies has increased. Among 15- to 19-year-olds, the average annual age-adjusted incidence increased from 183 per million in 1975-79 to more than 203 per million in 1990-95. The most common cancers among 15- to 19-year-olds in the United States are Hodgkin disease (19%), germ cell tumors (14%), CNS tumors (10%), non-Hodgkin lymphoma (NHL) (7%), malignant melanoma (7%) and acute lymphocytic leukemia (ALL) (6%). Ewing sarcoma seen in this child comprises about 5% of the cancers in this age group.

The cancer mortality rate for older adolescents is 41% higher than those younger than 15 years

old. The rate was 38 deaths per million for 15- to 19-year-olds compared to 27 per million for zero to 15-year-olds in the United States between 1994 and 1998.

Survival rates comparing five-year studies from 1974-76 and 1992-97 improved more for younger patients. For the 15- to 19-year-old group the change in survival rate was 23% versus approximately 40% for children less than 15 years of age.

More than 90% of patients younger than 15 years old with cancer are treated in institutions that participate in National Cancer Institute sponsored clinical trials in the United States. Only about 20% of 15- to 19-year-olds are treated at such institutions. Further, only about 10% are entered into a clinical trial.

Patients 15 to 19 years of age, treated at institutions participating in the Children's Cancer Group (CCG) or Pediatric Oncology Group (POG) trials had a better five-year survival rate than those treated elsewhere. These trials involved children with ALL, AML, osteosarcoma or Ewing sarcoma.

The survival data and special needs for adolescents with cancer prompted the NCI and the NCI-sponsored cooperative groups to launch a North American initiative to increase the rate of accrual of older adolescents with cancer in clinical trials.

The Children's Oncology Group (COG) is the consolidated cooperative group of POG and CCG. The group has taken a

Continued on the reverse side.

Continued from the front.

leadership role in the effort to improve the survival in the 15- to 19-year-old group. COG has identified five initiatives as priorities:

1. improving access to care by understanding barriers to participation;
2. conducting specific cancer control and human services research projects;
3. developing a cancer resource network that provides information

about clinical trials to patients, families, health care providers and the public;

4. increasing adolescent accrual and adult participation in sarcoma trials specifically designed for patients in this age group; and
5. enhancing adolescent treatment adherence (ie, compliance with protocol-prescribed therapy).

As members of the COG, the pediatric oncologists at The Children's Medical Center are involved in efforts to provide clinical trials to improve survival rates in the adolescent population. We strive to enroll all children and adolescents with cancer in the national and international protocols of the COG.

FEATURED SPECIALIST



Emmett H. Broxson, Jr., MD, is the medical director of hematology/oncology at The Children's Medical Center of Dayton. He attended the University of

Alabama School of Medicine and completed fellowships at University of Colorado School of Health Sciences and Denver Children's Hospital. Dr.

Broxson is board certified in pediatrics and hematology/oncology. He is an associate professor of pediatrics at Wright State University School of Medicine.

HEMATOLOGY/ONCOLOGY

The Comprehensive Care Center for Cancer and Blood Disorders provides services to children with blood disorders or malignancies through 20 years of age. The **program received a three-year approval** from the American College of Surgeons Commission on Cancer — making it one of only 17 approved pediatric programs in the country. Hematology/oncology services, one component of the program, are provided to children

with malignancies and blood disorders by our board-certified pediatric hematologists/oncologists. A multidisciplinary approach ensures that medical and psychosocial needs are met. The hematology/oncology department works closely with Children's Home Care of Dayton (CHCOD) and primary care physicians to meet the special needs of these children.

CONTACT INFORMATION

To speak to Dr. Broxson or to make a referral, call hematology/oncology at 937-641-3111 or e-mail Dr. Broxson at broxsone@childrensdayton.org.



For further information about The Children's Medical Center or its specialists contact us at 937-641-3666 or marketing@childrensdayton.org.



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