Sarcomas

Sarcomas are cancers that develop in the bone or soft tissues of the body. There are many types of sarcomas that can be found in different areas of the body. The name of the sarcoma refers to the place where the tumor started. Sarcomas are very rare, but can happen in people of all ages.

What is a bone sarcoma?

Cancer that starts in the bone is called a sarcoma or a primary bone cancer. This is different from a metastatic bone cancer that has spread to the bone from another part of the body.

A slow growing tumor is called a “low grade” tumor. A fast growing tumor is called a “high grade” tumor. Surgery and chemotherapy are used to treat a sarcoma. In some cases, patients may also need radiation treatment.

Types of bone sarcomas include:

- **Osteosarcoma**
  
  Osteosarcoma is the most common primary bone cancer. This type of cancer happens in teenagers and young adults, and is found most often in bones of the leg, arm or pelvis. Treatment for this type of cancer is chemotherapy before and after surgery.

- **Chondrosarcoma**
  
  Chondrosarcoma is the second most common primary bone cancer. It develops in the cartilage cells and usually occurs in adults. Cartilage is a tough and flexible tissue around the joints and bones. This cancer most often occurs in the shoulder, femur, and pelvis. Chondrosarcoma is often treated with surgery.

This handout is for informational purposes only. Talk with your doctor or health care team if you have any questions about your care.

Cryosurgery may also be used for low-grade cartilage tumors (also known as low grade chondrosarcomas). Cryosurgery uses very cold liquid gas (liquid nitrogen or carbon dioxide) to kill cancer cells by freezing them.

- Ewing’s Sarcoma

Ewing’s sarcoma is a cancer that starts in the bone or soft tissue near the bone. Most Ewing tumors happen in children and teens, but can also occur in adults. It occurs most often in the bones of the arm or leg. Treatment includes chemotherapy both before and after surgery. In some cases radiation treatment is needed.

What is a soft-tissue sarcoma?

Soft tissues connect, support and surround other parts of the body. A soft tissue sarcoma is a cancer that starts in the soft tissues. These may include muscles, tendons, nerves, fat, blood and lymph vessels and synovial tissues (found around joints). Soft tissue sarcoma can also develop in the arms, legs, chest or abdomen.

A slow growing tumor is called a “low grade” tumor. A fast growing tumor is called a “high grade” tumor. Most patients will need surgery. Some patients may also need chemotherapy or radiation treatment or both.

What are the symptoms of a sarcoma?

Symptoms of this type of cancer may be different for each person. The most common symptoms for bone sarcoma are pain, swelling or tenderness. The cancer can make the bone weak and cause it to break even when there is no injury. This is called a pathologic fracture. Other symptoms may include: a fever, feeling weak or tired and weight loss. Symptoms of a soft tissue sarcoma may include: a painless lump or an area of your body that looks larger than normal.

How is a sarcoma diagnosed?

Your doctor will do a physical exam, ask about your symptoms and check for any risk factors. Your doctor may order blood work, a number of tests and a biopsy to remove a sample of the tissue to see if it is cancer.
A biopsy can be done in two ways, depending on the size and location of the tumor. A needle biopsy can be done in the doctor’s office or a surgical biopsy can be done in the operating room. A pathologist (a doctor that studies cells) looks at the tissue sample and checks to see if it is cancer.

What tests are done to diagnose a sarcoma?

- **Computed Tomography (CT scan)** – This special X-ray machine uses a scanner and computer to take cross-sectional pictures of different parts of your body.

- **Magnetic Resonance Imaging (MRI)** – This is a special scanner linked to a computer that shows three-dimensional (3-D) pictures of the body. MRI uses magnetic field and radio waves instead of x-rays to take detailed pictures. Patients with metal in their body cannot have an MRI. **Tell your doctor if you have a cardiac pacemaker, a cardiac stent, a vascular filter, shrapnel or any other metal in your body.**

- **Bone Scan** – This test is done to look for changes or a problem in a bone, such as break, cancer or an infection. Before the test is done, a small amount of radioactive dye is injected into a vein in your arm. About three hours later, pictures are taken using a special camera. All bones are checked with a bone scan.

- **Position Emission Tomography (PET scan)** – This scan uses a small amount of radioactive material (tracer) to look for disease in the body. The tracer is given through a vein (IV) in your arm. The tracer travels through your blood and is absorbed by certain organs and tissues in areas of concern. Your radiation exposure is very small. Tell your doctor if you have diabetes because your blood sugar level needs to be at a certain level to have the scan.

**Treatment Plan**

Your health care team includes specialists in medicine, radiation oncology, radiology and surgery (surgical oncology or orthopaedics). The team works together to develop your personal treatment plan, which may include surgery, chemotherapy and radiation.
What kind of surgery will I need?

There are different types of surgery that may be done to treat sarcoma. These may include limb-sparing surgery, amputation or surgery of the abdomen.

- **Limb-Sparing Surgery**
  
  Limb-sparing (also called limb salvage) surgery is done to remove the cancer and prevent amputation. This is called a resection. If part or all of the bone needs to be removed in order to treat a bone cancer, it is replaced with a donated bone or artificial bone. If a tumor is large and involves blood vessels or nerves, limb-sparing surgery may not be an option.

  Your body will need time to heal after surgery. To protect your leg or arm, you may need to wear a brace for 6 to 12 months. After the bone and muscle has healed, the brace is not needed. Physical therapy may be needed after surgery. Your doctor will talk with you about what activities you can or cannot do after your surgery.

- **Amputation**
  
  An amputation is a surgery done to remove a limb or body part. An amputation may be needed if a tumor has grown too close to the nerves or blood vessels. After your surgery, you will have physical therapy and a prosthesis (artificial limb) will be made for you. Your health care team will give you information about resources to support you through treatment, and to help you adjust to the changes after an amputation.

- **Surgery of the Abdomen**
  
  Surgery may be done to remove a sarcoma tumor in the abdomen (belly). A surgical oncologist will do this type of surgery. During surgery, the tumor and other tissues that surround the tumor will be removed.

For More Information

- “Bone Cancer” or “Soft Tissue Sarcoma” at: www.cancer.gov or available by calling 800-4-CANCER.