What is Sarcoma?

A sarcoma is a malignant (cancerous) tumor that develops in connective tissues (tendons, cartilage, bone, fat, and blood). There are many types of sarcoma, with the two major categories being—soft-tissue sarcomas and bone sarcomas. The major forms of soft-tissue sarcomas are formed in muscles, blood vessels, tendon, fat, and nerves in the arms. Bone sarcomas often occur in the legs, especially around the knee.

Signs and Symptoms

In the early stages, it can be difficult to determine if a sarcoma is present because it can go undetected for a long period of time. Suspicious lumps or swollen areas of the body should be evaluated by a physician, who may conduct a biopsy to determine if the lump is a malignant or benign tumor. Over time, tumors will grow, become sore, and eventually cause pain because the tumor presses against nerves or muscle.

US STATISTICS

- Sarcoma accounts for about 1% of adult cancers and about 15% of childhood cancers.
- About 12,020 new cases of soft-tissue sarcoma are expected to be diagnosed in 2014, resulting in approximately 4,740 deaths.
- About 3,020 new cases of bone sarcoma are expected to be diagnosed in 2014, resulting in approximately 1,460 deaths.
- Of the new cases of bone sarcoma, about half occur in children and teenagers.

Risk Factors

There are no concrete reasons for developing sarcomas, but certain risk factors have been identified based on common characteristics in individuals who developed the disease, including:

- High doses of radiation exposure from treatments for other cancers; however, radiation treatment techniques have improved and more is known about selecting safe radiation doses to make sure the targeted area is treated more specifically thus, minimizing effects on surrounding bone, tissues, and organs.
- Individuals exposed to certain herbicides and preservatives have a higher risk (ex. chlorophenols in wood preservatives)
- Individuals with certain inherited diseases, such as Li-Fraumeni syndrome or von Recklinghausen’s disease, have an increased risk of developing a soft-tissue sarcoma or bone sarcoma.
- Removal or damage to a person’s lymph system through surgery or radiation therapy is another risk factor associated with soft-tissue sarcoma.
- Age, height, weight, race, gender, and certain bone diseases and inherited conditions are risk factors for bone sarcomas.

It’s not about bravery, it’s about sheer determination to win.
Tips for Prevention

There are no known ways to prevent the development of a bone or soft-tissue sarcoma. The best way to reduce the risk for developing all forms of cancer is to maintain a healthy lifestyle and get regular check-ups.

Treatment Options

Once a sarcoma is diagnosed, the treatment plan will be based on type, size, location, stage of the cancer, and the patient’s age and overall health. Depending on the cancer’s location, as well as its stage of development, surgery is usually recommended. Other treatment options include Chemotherapy, Radiation therapy and Cryosurgery (bone sarcoma). Some sarcomas require a combination of these treatments.

Normal surrounding tissue is usually removed to reduce the risk of the tumor spreading to adjacent areas. Radiation therapy or chemotherapy may also be used to reduce the chances the tumor will recur.

QUESTIONS AND ANSWERS

Q: What is soft tissue?
A: The term soft tissue refers to tissue that connects, supports, or surrounds other structures and organs of the body. Soft tissue includes muscles, tendons (bands of fiber that connect muscles to bones), fibrous tissues, fat, blood vessels, nervous, and synovial tissues (tissues around joints).

Q: What are the possible causes of tissue sarcoma?
A: Studies suggest that workers who are exposed to phenoxyacetic acid in herbicides and chlorophenols in wood preservatives may have an increased risk of developing sarcomas. An unusual percentage of patients with a rare blood vessel tumor, angiosarcoma of the liver for example, have been exposed to vinyl chloride in their work. This substance is used in the manufacture of certain plastics.

Q: Where do soft-tissue sarcomas develop?
A: About 40% occur in the legs, usually at or above the knee. 15% develop in the hands and arms. 15% in the head and 30% in the shoulders, chest, abdomen, or hips.

Q: How do you know if a tumor is benign or malignant?
A: The only reliable way to determine whether a soft tissue tumor or bone tumor is benign or malignant is through a surgical biopsy. Therefore, all lumps that persist or grow should be biopsied.
- During this procedure, a doctor makes an incision or uses a special needle to remove a sample of tumor tissue. A pathologist examines the tissue under a microscope.
- If cancer is present, the pathologist can usually determine the type of cancer and its grade. The grade of the tumor is determined by how abnormal the cancer cells appear when examined under a microscope. The grade predicts the growth rate of the tumor and its tendency to spread. Although low-grade sarcomas are cancerous, they are unlikely to metastasize. High-grade sarcomas are more likely to spread to other parts of the body.

Q: What are the possible causes of bone cancer?
A: Bone sarcomas occur more frequently in people who have had high-dose external radiation therapy or treatment with certain anticancer drugs; children seem to be particularly susceptible. A small number of bone cancers are due to heredity. Additionally, people who have hereditary defects of bones and people with metal implants, which doctors sometimes use to repair fractures, are more likely to develop bone sarcomas.

Cryosurgery: the use of extreme cold produced by liquid nitrogen to freeze and kill cancer cells
Phenoxyacetic acid: an acid C₈H₉O₃ used as a fungicide and in plasters and pads to soften callused skin surfaces
Angiosarcoma: A form of tissue sarcoma that arises in the lining of blood vessels. It tends to be aggressive, recur locally, and spread widely.