

Orthopedic Cancers

Orthopedic cancers are associated with bones, and are most often cancers that are metastatic, meaning that the cancer spreads to the bones from other parts of the body, such as the breast, lung, and prostate. Many women treated for breast cancer and men treated for prostate cancer develop bone metastases. Blood cancers such as multiple myeloma or lymphoma may also arise in the bone marrow. Sarcomas usually begin in the limbs and may originate from bone, muscle, fat, blood vessels, fibrous tissues, deep skin tissues, or nerves or, in most cases, the cell of origin is unknown. A tumor arising from bone cells is called an osteosarcoma. Other forms of primary bone sarcomas are chondrosarcoma, Ewing's sarcoma, and chordoma.

Statistics

- In 2019, approximately 3,500 new cases of primary bone and joint cancer, which start directly in the bone, will be diagnosed in the U.S.
- Many more will be affected by cancer that started elsewhere and spread to the bones.
- Approximately 1,660 deaths are expected nationally for primary bone and joint cancer.

Risk Factors

There are certain factors that increase the risk of developing bone cancers. Not all factors put a person at risk for every form of bone cancer. Some of these risk factors include:

- Previous radiation therapy treatment.
- Previous treatment with anticancer drugs known as alkylating agents.
- Certain conditions such as hereditary retinoblastoma, Li-Fraumeni syndrome, Diamond-Blackfan anemia, Rothmund-Thomson syndrome, chondrosarcomas, Paget disease, multiple exostoses, chordomas, Bloom syndrome, and Werner syndrome.
- Some patients have developed bone cancer after receiving a bone marrow transplant.

Signs and Symptoms

The following may be symptoms of bone cancer due to the pressure of the tumor on healthy bone tissue, but could also be linked to other health conditions:

The first and most common symptom of bone cancer is pain or tenderness near the cancer. Bone pain may be difficult to differentiate from regular pain or arthritis. It may be sporadic at first, and then becomes more constant and severe, even at night. It can be worse with movement or in different positions, such as standing up. If the pain doesn't go away, and is unlike other pain, it should be evaluated by a physician with experience in orthopedic cancers.

Swelling or lumps in the area of pain, stiff or tender joints, limping, fatigue, and weight loss can also be caused by bone cancer. Numbness, tingling, and weakness can be caused by the cancer pressing on a nerve. On rare occasions, fever, anemia, and a feeling of being unwell. A pathological fracture is a break in a bone not due to force or trauma, but to problems within the bone itself. Pathological fractures can occur when cancer destroys enough bone so that the bone can no longer support body weight sufficiently. People with these symptoms should consult their physician.

Prevention

There are no lifestyle or medical interventions known to prevent bone cancer from forming. The best way to diagnose bone cancer is to be aware of the signs and symptoms of this disease.

Treatment Options

Treatment options depend on the stage, type, size, and location of the cancer, the patient's age and health, as well as whether the cancer started in the bone or spread from another area of the body. Many bone cancer patients require a team of physicians, called a multidisciplinary team, which may include an orthopedic surgeon, radiation oncologist, and a medical oncologist. Treatment options can include surgery, radiation, chemotherapy, targeted therapy, and palliative care. In the common instance of the cancer spreading to the bone, treatment depends on where the cancer originated. Limb-sparing surgery may be needed to reconstruct the skeleton to preserve function of the limb and control pain. Radiation therapy is also an option for targeting the affected area and relieving pain. If eligible, patients may also consider entering a clinical trial.

Sources: American Cancer Society, American Society of Clinical Oncology, National Cancer Institute, National Center for Biotechnology Information



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