Osteogenic Sarcoma

Osteogenic sarcoma is cancer in a bone or bones. It is often called *osteosarcoma*. This type of cancer starts in the bone itself. It is not a cancer that comes from somewhere else in the body. This cancer often affects the ends of the long bones of the arms and legs. For example, it may affect around the knees. However, it can develop in the pelvis, shoulder, jaw and other bones, too. Osteogenic sarcoma occurs most often in younger people, ages 10 to 30. It develops in males more often than in females.

CAUSES

Most of the time, the cause of osteogenic sarcoma is not known. However, you are more likely to have this cancer if:

- Someone in your immediate family has had it. That includes parents, brothers and sisters, grandparents, aunts and uncles.
- Your bones are growing rapidly. For example in teenagers having a growth spurt.
- You are older and have Paget's disease, which causes bones to become larger and weaker than normal.
- You have been exposed to high doses of radiation.
- You have had a bone marrow transplant.
- You have had a rare eye cancer (*retinoblastoma*).
- You have an inherited genetic condition, such as Li-Fraumeni syndrome. This is a rare condition, but the gene mutations make certain types of cancer more likely.

SYMPTOMS

Symptoms vary based on where the cancer is located. However, major signs and symptoms are:

- Pain in a specific spot (this is probably where the cancerous tumor is growing).
- Pain that is severe enough to wake you at night.
- Pain that gets worse with activity or causes you to limp.
- Fatigue.
- Night sweats.
- Swelling or a lump.
- Weight loss (when you were not trying to lose weight).
- Difficulty breathing.
- A broken bone. This is rare.

DIAGNOSIS

Your healthcare provider will probably:

- Ask about your symptoms.
- Review your personal and family medical history.
- Order some tests. These could include:
  - Blood tests. These can help identify the cause of your symptoms.
  - X-rays. These can pinpoint the affected area.
  - Bone scan. A radioactive substance is injected into your blood. It then goes to your bones and highlights any cancer cells.
  - CT scan (*computed tomography*)of the painful area and your lungs. A computer generates an image of your bone and nearby tissues.
  - MRI (*magnetic resonance imaging*). A machine uses magnetic waves to make images of your bones and tissues.
- Order a biopsy. A sample of tissue will be taken from the area. This will confirm that cancer is present. It also gives your caregiver detailed information on your cancer.

TREATMENT

The current standard of care for most people with osteogenic sarcoma is chemotherapy, then surgery and then more chemotherapy. However, your specific treatment plan will depend on the details of your cancer. Treatment options include:

- Chemotherapy. You would be given drugs designed to kill cancer cells.
- Surgery. A surgeon would remove the cancerous cells and surrounding tissue. Nearby lymph nodes might also be removed. The affected area of the bone is removed.
- Radiation. Sometimes external beam radiation is used to kill cancer cells. This means radiation is delivered from a source outside the body. Other times, radioactive chemicals are injected into the body.
- Stem cells. If high-dose chemotherapy (called myeloablative therapy) is given, it can damage bone marrow (the sponge-like tissue inside the bone). Then, stem cells might be implanted to help restore the bone marrow.

PROGNOSIS

Recovery from osteogenic sarcoma depends on many factors including:

- Your age.
- Your overall health.
- Where the cancer was located.
- Whether it has spread to other parts of the body.

For many people, the outlook is good because current treatments can often cure the cancer and save the limb.

HOME CARE INSTRUCTIONS

- Learn how to take any medicines that have been prescribed.
- Ask your healthcare provider what symptoms would require further medical attention.
- If you are having chemotherapy, learn which foods would be best during treatment. Chemo can change how foods taste and can also change a person's appetite.
- Ask whether you will need rehabilitation sessions. If you will have a manmade limb (*prosthesis*), you will need to learn how to best use it and adapt to it. If your limb has been salvaged with an internal prosthesis you will likely have activity restrictions.
- Consider joining a support group for people with bone cancer. Groups also are available for friends and families.

SEEK MEDICAL CARE IF:

- You develop a fever of more than 100.5°F (38.1 ° C).
- Your pain increases, even though you are taking pain medicine as instructed.
- You experience significant side effects from the medications. Many side effects can be managed so you are not uncomfortable. Side effects to watch for include nausea, vomiting, mouth sores and hair loss.

SEEK IMMEDIATE MEDICAL CARE IF:

- You develop a fever above 102.0°F (38.9 ° C).

Document Released: 05/06/2010
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