Osteosarcoma - Childhood - Diagnosis [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 07/2013

ON THIS PAGE: You will find a list of the common tests, procedures, and scans that doctors can use to find out what?s wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose a tumor and find out if it has metastasized (spread). Some tests may also determine which treatments may be the most effective. For most tumors, a biopsy is the only way to make a definitive diagnosis of cancer. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis. Imaging tests may be used to find out whether the cancer has spread. This list describes options for diagnosing this type of cancer, and not all tests listed will be used for every child. Your child?s doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of tumor suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose osteosarcoma. It is recommended that a health care team with experience diagnosing and treating bone tumors perform these tests.

Imaging tests

X-ray. An x-ray is a way to create a picture of the structures inside of the body using a small amount of radiation. The doctor will take an x-ray of the area where there is a lump or swelling. Osteosarcoma usually shows certain common features on an x-ray.

Computed tomography (CT or CAT) scan [3]**.** A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor?s size. Sometimes, a contrast medium (a special dye) is injected into a patient?s vein or given orally (by mouth) to provide better detail.

Magnetic resonance imaging (MRI) [4]**.** An MRI uses magnetic fields, not x-rays, to produce

detailed images of the body. A contrast medium may be injected into a patient?s vein or given orally to create a clearer picture. An MRI creates more detailed pictures than CT scans and can sometimes help find a smaller tumor. Also, an MRI provides more exact pictures of the tumor and the surrounding healthy tissue; this can help the orthopedic surgeon (a doctor who specializes in surgery on the bones) plan surgery to remove the tumor-containing area of bone with a portion of the surrounding healthy tissue (called a margin).

Positron emission tomography (PET) scan. [5] A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive substance is injected into a patient?s body. This substance is absorbed mainly by organs and tissues that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body. The role of PET scans in the diagnosis and follow-up care of people with osteosarcoma is still being investigated.

Bone scan [6]**.** A bone scan uses a radioactive tracer to look at the inside of the bones. The tracer is injected into a patient?s vein. It collects in areas of the bone and is detected by a special camera. Healthy bone appears gray to the camera, and areas of injury, such as those caused by a tumor, appear dark. However, it is also normal that areas where new bone is being formed, such as the growth plates (called epiphyses), appear dark.

Arteriogram (also called angiogram). An arteriogram is a way for doctors to see inside the arteries. A small amount of a contrast medium is injected into an artery, making it appear on an x-ray. A surgeon may use this test to help plan surgery.

Biopsy [7]**.** A biopsy is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that a tumor is present, but only a biopsy can make a definitive diagnosis. The sample removed during the biopsy is analyzed by a pathologist (a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease). A doctor who specializes in bone tumors should perform the biopsy, which typically involves surgery, or sometimes, a needle biopsy (using a hollow needle inserted into the tumor). Doctors may analyze the genes in the cancer cells to distinguish osteosarcoma from other types of cancer.

After these diagnostic tests are done, your child?s doctor will review all of the results with you. If the diagnosis is cancer, these results also help the doctor describe the location(s) of the cancer; this is called staging.

The next section helps explain the different stages for this type of cancer. Use the menu on the side of your screen to select Stages, or you can select another section, to continue reading this guide.

Links:
[1] http://www.cancer.net/cancer-types/osteosarcoma-childhood/diagnosis
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/24486
[4] http://www.cancer.net/node/24578
[5] http://www.cancer.net/node/24648

[6] http://www.cancer.net/node/24410
[7] http://www.cancer.net/node/24406