Members of the Multidisciplinary Spine Tumor Service regularly meet to coordinate care. From left: neuroradiologist Eric Lis, clinical nurse Cynthia Correa, neurosurgeon Mark Bilsky, and radiation oncologist Josh Yamada.

Diagnosing a spine tumor usually starts with a comprehensive medical examination to assess your symptoms. Once your treatment team has a complete diagnostic profile, they'll customize a plan of care that fits your unique situation.

Imaging

Doctors at Memorial Sloan Kettering use advanced imaging technologies to identify the size and precise location of a spine tumor. Imaging is also used to see the impact of the tumor on your spine, as well as the health and stability of your vertebrae. Information from imaging tests can help determine the most effective treatment and reduce the risk of complications from surgery or radiation therapy.

The following imaging tests are commonly used with spine tumors:

Magnetic resonance imaging (MRI)

This is the most reliable method for diagnosing spine tumors. MRI can identify spinal cord compression, even if you don't have pain or other neurologic symptoms, and can often distinguish between malignant and benign lesions.

Computed tomography (CT)

These scans use multiple X-rays to determine your tumor's size and location and assess the quality of the bones in your spine. This helps determine the tumor's stage (seriousness) and whether it's metastasized (spread).

X-rays

An X-ray can identify the specific vertebra compressing your spinal cord and evaluate spine alignment. During treatment, X-rays can also help your doctor assess the placement of rods and pedicle screws used to stabilize your spine.

Positron emission tomography (PET)

PET can screen for spinal metastases and help distinguish between malignant and benign bone lesions. Before this scan begins, a small amount of radioactive sugar is injected into a vein. Because cancer cells absorb sugar more rapidly than normal cells, they show up on the scan.

Myelography

A radiologist takes an X-ray of the affected area after injecting a dye into your spinal fluid cavity. The image shows the tumor's outline and can help direct radiation beams during radiation therapy. Because MRI is more effective for diagnosing spine tumors, myelography is mostly used to plan your treatment before using a high-dose, high-precision radiation therapy called stereotactic radiosurgery.

Biopsy

During a biopsy, the spine tumor experts at Memorial Sloan Kettering use a CT scan (alone or with an imaging contrast dye) to help guide a needle into the tumor and remove a small amount of fluid or tissue for examination under a microscope.

A pathologist will study your sample to determine whether the tumor started in your spine (a primary tumor), and whether it's spread from somewhere else in your body. If the tumor is primary, the biopsy can determine whether it's malignant (cancerous) or benign (noncancerous). If your tumor started somewhere else, the biopsy can usually reveal where it began.

Many spine tumor biopsies are performed using a minimally invasive approach, in which a CT scan is used to guide the placement of a thin needle into the tumor or surrounding fluid.

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