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Down to the Bone

BY PAUL ENGSTROM

Managing the pain of cancer that has spread to bone—most commonly in breast, prostate, lung, and kidney cancers, and in multiple myeloma—presents special challenges. One of them is movement-induced pain, says Tom Smith, MD, medical director of the Thomas Palliative Care Unit at Virginia Commonwealth University Massey Cancer Center in Richmond. “If you have bones that are grating or stretching or scratching one another,” he says, “that sort of motion pain can be among the most difficult to relieve.”

A number of new treatments for cancer-related bone pain are under investigation. In clinical trials, researchers are combining Lyrica (pregabalin), an anticonvulsant used to treat nerve pain, with radiation therapy, the current standard for bone pain relief, to learn if this is more effective than radiation alone. In another trial at the University of Wisconsin, a rapid freezing technique called cryoablation is being compared with radiation.

In some cases, doctors can now relieve bone pain for which opioids and other options are not effective by injecting a special kind of cement—a technique called percutaneous cementoplasty—into diseased bone cavities. If a diseased vertebra must be removed, surgeons can fashion a cement-filled wire basket as a replacement. Kyphoplasty, another option for cancer that has spread to the spine, repairs fractures and restores the vertebrae to the correct position using a balloon that creates a mold for bone cement.

Two current trends in radiation therapy for bone pain are hypofractionation, in which oncologists administer one or two large radiation doses rather than 10 or 12 small doses, and stereotactic radiation, in which a large dose is focused on a specific portion of bone or other tissue, often over just a few days.

Hypofractionation “works just as well as small, multiple doses, relieves pain quicker, and costs a lot less because there are fewer treatments involved,” Smith says. “Hypofractionated radiation relieves pain very quickly, often more quickly than longer treatment plans.”

In addition to radiation therapy, other options for treating cancer-related bone pain are bisphosphonates, chemotherapy, surgery, and radiopharmaceuticals,

including Quadramet (samarium-153) and Metastron (strontium-89). The latter are radioactive materials that can be targeted to certain kinds of bone lesions, especially those in prostate cancer, and thus reduce pain.

Bisphosphonates are a relatively new class of drugs offering multiple benefits. By inhibiting cells called osteoclasts that break down bone tissue, they counteract osteoporosis and treatment-related bone loss, which in turn reduces the risk of fracture. Bisphosphonates, which also have a pain-killing effect, include Aredia (pamidronate) and the more potent and more commonly used Zometa (zoledronic acid).