

# BONE METASTASES

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Bone metastases are cancers that have spread from a primary site to the bone. The primary site is the origin of cancer. In a particular patient, it may be cancer originating in the breast, lung, intestines, kidney, skin or other sites.

The relative travel from the primary site to the bone is usually the blood stream, although some times adjacent erosion of the bone may occur from a primary tumor. The second possibility is less frequent in occurrence.

Bone metastases are worrisome for several reasons. The first is they may cause pain that is sometimes intractable or produce a need to take pain medicines that have significant side effects. Furthermore, bone metastases may occur in bones responsible for bearing weight such as the spine, pelvis or long bones of the legs. These bones may snap under such duress creating further pain and immobility.

For the vast majority of patients with bone metastases, radiation offers an excellent method of palliation. Generally, radiation will kill the cancer cells within the area of concern, allowing the normal bone to heal.

In an accompanying editorial by Porter and Fontanesi, "probably the most important tenet when treating in the palliative setting is to remove the distressing symptom as quickly, and as effectively as possible. External beam radiation has an established role in the palliation of bone metastases, with a complete and partial response rate greater than 75%."

While for the vast majority of patients, radiation is successful for the remainder of the patient's life, occasionally the cancer will return to a previously-successfully treated area.

A recent article by Mithal et al from the Royal London Hospital evaluated the possibility of re-treatment with radiation for painful metastases. The authors evaluated 97 patients who had 280 sites radiated.

Radiation to the spinal cord was excluded because of the known sensitivity of this neurologic pathway to radiation.

The authors defined a complete response as "complete freedom from pain with no analgesic requirements." They defined a partial response as "improved pain but analgesic medicine still required." Fifty-seven sites of cancer were re-treated with the results presented.

The most common primary sites that cancer originated in these patients included the breast, prostate, lung and kidney, as well as several patients with myeloma.

Responses to radiation occurred in 84% of patients treated the first time and 87.5% of patients re-irradiated. The sites irradiated included most commonly, the vertebral or spinal column, long bones and hemibody (half-body).

Mithal et al noted there was "no effective patient age, sex, primary tumor-type or site seen on response to re-treatment."

It was concluded that "The data presented here supports the re-treatment of sites of metastatic bone pain following initial irradiation, particularly where this follows an initial period of response. A proportion of non-responders have also responded to second dose irradiation, but this is a small subgroup from which clear conclusions cannot be drawn."

In an accompanying editorial by Porter and Fontanesi, it was noted that "bone metastases can be associated with severe pain, debilitation and a reduction in "quality of life" with severe socio-economic impact."

The editorialist went on to observe "Radiation Oncologists are among the few healthcare professionals who have dual role, both in curing disease, but also palliating symptoms. For many years there has been considerably more interest in those patients who can be cured rather than those patients with distressing symptoms that need to be palliated. But, perhaps things are changing."

This study opens up the possibility of repeat radiation to small areas to enhance the quality of life and diminish pain and suffering.

This information will be of great news to many afflicted with cancer.