Ablation and Cement Treatment for Painful Bone Metastases: When Might They Be Considered?

Patient guide | Orthopaedic oncology

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Ablation uses heat or cold to treat tumour tissue in a selected bone metastasis. Cement treatment supports a suitable damaged area; it serves a different purpose. Either may help particular patients, sometimes alongside radiotherapy, fixation or cancer medicines. The choice depends on the cause of pain, bone strength, nearby nerves and organs, and the benefit being sought. A small skin opening does not make the procedure suitable for every lesion or remove the need for a recovery plan.[1][2]

Do not wait for an elective procedure: New weakness or bladder or bowel changes need emergency assessment. Sudden severe limb pain or loss of use needs urgent fracture assessment.

What do the two procedures actually do?

Radiofrequency and microwave ablation use heat; cryoablation uses cold. Cementoplasty means injecting medical bone cement into a suitable damaged area to provide support and help with pain.[1]

Ablation and bone support have different roles

For selected bone metastases, the treatment plan may address tumour tissue, bone strength or both.

Treating the local tumour

Ablation uses heat or cold on selected tumour tissue. It may aim to relieve pain or control that deposit.

Supporting the weakened bone

Cement, fixation or a combination

The site, remaining strength and risk of fracture help determine what support is needed.

Less pain does not prove that the bone is strong enough. Your team checks how much weight the affected bone can safely take as treatment progresses.

Local treatment does not replace medicines needed for cancer elsewhere. Cement does not suit every weakened bone.[1]

When might a needle-based procedure be worthwhile?

The team first establishes where the pain comes from and what the person hopes to regain. A painful deposit that has not responded adequately to medicines or radiotherapy, or cannot reasonably receive those treatments, may be considered for ablation. In selected limited disease, local tumour control may also be an aim.[1][2]

The decision includes the cancer type, disease elsewhere, previous treatment, general health and the burden of the procedure. A useful benefit might be sleeping more comfortably, needing less pain medicine or finding movement easier. These goals should be agreed before treatment, then reviewed afterwards.[1][2]

Why does bone strength change the choice?

> **Dr. Vishnu's perspective**
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> I would separate three goals: relieving pain, treating the tumour at that site and supporting the weakened bone. Ablation and cement may work together, but neither automatically replaces fixation of an unsafe bone. A small puncture does not tell us how strong the bone will be afterwards. Before you leave, I want you to know what the procedure is expected to achieve and how much walking or lifting is permitted, even if pain improves quickly.[1]

The team reviews how much supporting bone remains, the forces through that area and whether a fracture has already occurred. Some people need cement or another form of consolidation; others need fixation or reconstruction.[1]

The spine also requires assessment of stability and pressure on nerves. A needle procedure should not bypass treatment of an unstable spine or spinal cord compression. The spinal-metastases guide explains those separate decisions.[1][4]

What makes a target suitable, or unsuitable?

Scans show the deposit, the route for the probe and nearby nerves, skin, joints and organs. The interventional radiologist plans monitoring and protection of those structures. If adequate protection is not possible, another treatment may offer a better balance. Blood clotting, infection and suitability for the required anaesthetic also matter.[1]

This discussion assumes a metastasis has been appropriately assessed. An unexplained bone lesion may need a planned biopsy first, particularly if a primary bone sarcoma is possible. Destroying or cementing a lesion before establishing what it is can interfere with the right treatment.[1][3]

How does it fit with radiotherapy and cancer medicines?

Radiotherapy, ablation, surgery and pain medicines have overlapping but different roles. Prior radiotherapy does not automatically rule out ablation, and ablation does not automatically replace radiotherapy. The choice depends on the site, previous response, structural needs and what the wider cancer plan is trying to achieve.[1][2]

More about the evidence

CIRSE provides expert standards of practice for selection and safe technique, rather than a randomised comparison of all treatments. The prospective MOTION study reported pain improvement after cryoablation in selected adults for whom usual treatment was unsuitable or

inadequate. Pain scores improved, although the study did not meet its prespecified statistical criterion for the main pain endpoint. Without a comparison group it cannot establish superiority over radiotherapy or surgery. Serious complications, including a severe skin injury, were reported.[1][2]

What are the risks and what happens afterwards?

Important risks include bleeding, infection, fracture and injury to nearby tissues from heat or cold. Thermal injury can be serious; nerve injury can affect feeling or movement. Cement can leak outside the intended area. The consequences depend on the site, so the consent discussion should explain the risks that matter for this lesion.[1][2]

Afterwards, the team checks pain, neurological function and possible complications. You also need clear instructions about medicines and whom to contact.[1]

Follow-up considers pain, medicine needs and daily function as well as any imaging required for the treatment goal. New or worsening pain needs reassessment rather than being assumed to be normal recovery. The fracture-prevention guide explains why support may remain important.[1]

New neurological symptoms need emergency assessment

New weakness, difficulty walking, altered sensation or bladder or bowel changes may indicate spinal cord or nerve compression. Seek emergency assessment, even without back pain, rather than waiting for an ablation appointment.[4]

Protect the limb and get urgent help for a possible fracture

Sudden severe limb pain, a new deformity or inability to stand or use the limb needs urgent assessment. Protect it and do not keep testing it by walking or lifting through the pain.[5]

Frequently Asked Questions

Are ablation and cement always given together?

No. They have different purposes and may be used separately or together. The choice depends on the tumour target, remaining bone strength and nearby structures.[1]

Can I walk normally once the pain is better?

Pain relief does not prove that a weakened bone is safe. Follow the specific loading and walking-aid instructions until the team has reassessed the reconstruction or treated site.[1]

Can this treatment replace medicines for cancer elsewhere?

A local procedure treats a selected site. It does not replace systemic treatment when that is needed for the wider cancer; the teams should agree how the treatments fit together.[1]

Your consultation

Discuss a painful bone metastasis in Kannur

To discuss a painful bone metastasis and the proposed treatment, you can book a consultation with Dr. Vishnu Baburaj at Aster MIMS Kannur. Assessment can help relate structural needs to the oncology and interventional-radiology plan.

Book a consultation Plan your visit
Preparing for your consultation

The evidence behind this article

1. Ryan A, Byrne C, Pusceddu C, et al. CIRSE Standards of Practice on Thermal Ablation of Bone Tumours. *Cardiovascular and Interventional Radiology.* 2022;45:591–605. Ablation selection, tissue protection and structural support.
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3. Gerrand C, et al. UK guidelines for the management of bone sarcomas. *British Journal of Cancer.* 2025. Imaging and planned biopsy. Why an unexplained bone lesion needs planned diagnosis.
4. NICE. *Spinal metastases and metastatic spinal cord compression.* NG234, 2023. Box 1 and emergency recognition. Spinal compression symptoms and emergency action.
5. NHS. *Broken leg.* Symptoms and urgent assessment. Urgent fracture advice.

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