

Bone Metastases: When Is Surgery Recommended Before a Fracture?

A guide to the assessment, the purpose of an operation and the questions to discuss with your team.

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An operation can be recommended even when a bone has not broken. Cancer that has spread to a long bone, such as the thigh or upper arm bone, may weaken it enough for the surgeon to consider strengthening or replacing the affected area before a fracture.^[1]

This article focuses on that preventive decision in the arm or leg, with several examples concerning the femur, or thigh bone.

What does an impending pathological fracture mean?

An **impending pathological fracture** means that a bone is weakened and at risk, but has not yet broken. An operation to support it before a break is called prophylactic fixation or preventive stabilisation.^[2]

How do specialists assess the risk?

The assessment brings together symptoms and imaging. Doctors consider pain, the lesion's position and size, and how much of the bone's strong outer layer is affected. These findings help them judge the risk posed by the particular weakened area.^[2]

A prediction has limits

No assessment predicts every fracture correctly. Some scoring methods can label bones as likely to break when they would not. A score needs clinical interpretation; it is not a reliable self-test or an automatic reason to operate.^[2]

The diagnosis also needs to be secure. For an isolated lesion whose cause is uncertain, further investigation, sometimes including a planned biopsy, may be needed before definitive fixation. A cancer history alone should not settle the identity of a new bone lesion.^[3]

How does surgery fit with the rest of treatment?

The cancer type, affected bone, other treatment and general health all matter. The decision should weigh the intended benefit against the disadvantages and alternatives, including how it fits your priorities.^[1] Consider what you want help with now: getting out of bed, walking to the bathroom or remaining at home with less assistance.

For disease in the upper thigh bone, an operation may use a rod inside the bone with screws, or replace a damaged segment and joint. The site and extent of damage influence this choice. The aims include pain relief and preserving useful function.^[3]

These operations have risks, including blood clots, infection and problems with the implant. The type of reconstruction affects which complications matter most. Discuss the risks of the specific procedure being offered.^[3]

Dr. Vishnu's perspective

I want us to discuss what accepting this operation would involve as well as what it might improve. How much help would you need afterwards, and what would time in hospital mean for you? If recovery is likely to take more from you than the benefit it could offer, we should be honest about that and discuss the alternatives.

What does research say about operating earlier?

Preventive surgery is considered for the bone and the person in front of the surgeon. An observational study found better survival after preventive femoral fixation than after fixation of a completed fracture, but it cannot prove that earlier surgery caused that difference or predict an

individual's survival.^[4]

More about the evidence

The US veterans study retrospectively compared femoral fixation before and after a fracture, adjusting for cancer type and other illnesses. It could not fully account for the extent or pace of the cancer. Participants were predominantly men, and joint replacements were excluded.^[4]

Can radiotherapy take the place of fixation?

For a femur at high fracture risk, specialist guidance cautions that radiotherapy should not replace preventive stabilisation when this is needed.^[5]

Questions about movement while the plan is being made

Before you go home to await treatment, the team needs to explain what the limb can safely bear and help plan the movements you need to manage. The individual answers that matter include:

- Can I put weight on this leg, and do I need a walking aid?
- What should I do about stairs, getting into a car or transferring from a chair?
- If the affected bone is in my arm, what lifting or pushing should I avoid?
- Who should I contact if the pain changes before my next appointment?
- If surgery is advised, what help should I arrange at home afterwards?

Seek urgent help for a suspected fracture

If you think the leg may have broken, get urgent medical advice. A leg that looks bent or out of shape needs emergency care.^[6]

Frequently Asked Questions

Why would a surgeon operate before a bone has broken?

Cancer deposits can weaken a long bone. If the surgeon judges it at risk of breaking, an operation may be offered to strengthen or replace the affected part before a fracture occurs. Suitability depends on the cancer, the bone and your general health. ^[1]

Is the decision based only on the scan?

No. Imaging findings and pain contribute to fracture-risk assessment. Prediction remains imperfect, so a risk score should not be treated as an automatic instruction to have surgery. ^[2]

Can radiotherapy replace preventive fixation?

For a femur judged at high fracture risk, radiotherapy does not replace preventive stabilisation when this is needed. [\[5\]](#)

Does everyone have the same operation?

No. In the upper thigh bone, choices include internal fixation or replacement. The affected area, remaining bone and the person's wider clinical situation influence the choice. [\[3\]](#)

Your consultation

Discuss preventive bone surgery in Kannur

To discuss a recommendation for surgery before a metastatic bone fracture, you can book a consultation with Dr. Vishnu Baburaj at Aster MIMS Kannur.

[Book a consultation](#)

[Plan your visit](#)

The evidence behind this article

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4. Philipp TC, Mikula JD, Doung YC, Gundle KR. [Is There an Association Between Prophylactic Femur Stabilization and Survival in Patients with Metastatic Bone Disease?](#) Clinical Orthopaedics and Related Research. 2020;478:540-546. doi:10.1097/CORR.0000000000000803.
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