

The Proximal Femur Reconstruction Or Internal Fixation For Metastases (PERFORM) Randomized Controlled Trial

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Significance & Hypothesis/Techniques

Metastatic disease of the proximal femur commonly causes impending or completed pathologic fracture and often requires surgical stabilization. Proximal femur reconstruction and internal fixation are the 2 principal operative strategies, yet high-quality comparative evidence to guide procedure selection is lacking. PERFORM was designed to determine whether an international pragmatic randomized trial comparing these strategies is feasible and capable of producing patient-centered evidence to guide surgical decision-making in this high-risk population.

Innovation

PERFORM applies a pragmatic international randomized design to a complex orthopaedic oncology population in which comparative prospective evidence has historically been difficult to generate. The trial also uses a patient-centered hierarchical composite primary outcome that prioritizes death, physical function, and days at home, thereby capturing survival and quality of life within a clinically meaningful framework.

Approach

PERFORM is an international, multicenter, pragmatic randomized controlled trial comparing proximal femur reconstruction versus internal fixation in patients with metastatic disease of the proximal femur requiring operative management. Participants are randomized 1:1. Secondary outcomes include complications, reoperations, and health utility. Study data are collected through centralized electronic data capture and patient-reported outcome platforms.

Results

To date, 21 patients have been randomized and 7 sites are open for enrolment, with an additional 20 centers in regulatory start-up. Early trial performance demonstrates strong surgeon engagement, efficient implementation of randomization, and favorable patient acceptance of enrolment. Enrollment rates and protocol adherence support the feasibility of conducting a large pragmatic surgical trial in this medically complex oncologic population.

Discussion & Impact

PERFORM is progressing successfully as a large international randomized trial in orthopaedic oncology. Early study performance supports the feasibility of collaborative randomized evaluation of surgical management for metastatic proximal femur disease. As global participation expands, this trial is well positioned to provide definitive, patient-centered evidence that may directly influence operative decision-making and improve outcomes for patients with metastatic bone disease.