

**Outcome of operative stabilization for metastatic pathological diaphyseal femoral fracture,  
A Thai musculoskeletal tumor society study**

Chindanai Hongsaprabhas<sup>1</sup>, MD, MSc, Varah Yuenyongviwat<sup>2</sup>, MD,  
Saran Subhadrabandhu<sup>3</sup>, MD, Taweechok Wisanuyotin<sup>4</sup>, MD,  
Taninnit Leerapun<sup>5</sup>, MD, Apichat Asavamongkolkul<sup>6</sup>, MD

<sup>1</sup> Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

<sup>2</sup> Department of Orthopaedic Surgery and Physical Medicine, Faculty of Medicine, Prince of Songkla University, Songkla, Thailand

<sup>3</sup> Department of Orthopaedics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

<sup>4</sup> Department of Orthopedic, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

<sup>5</sup> Department of Orthopedics, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

<sup>6</sup> Department of Orthopaedic Surgery, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

**Background:** The operative stabilization treatment for metastatic pathological diaphyseal femoral fracture is challenging, however the consensus on which implants and techniques are more appropriated still not well establish.

**Purpose:** To analyze the results and identify the prognostic factors of surgical fixation for pathological fractures at subtrochanter and shaft of femur.

**Patients and Methods:** A retrospective descriptive multicenter study was performed by collecting data from six institutes in Thailand. One hundred and fifteen patients with both impending and complete fracture were enrolled. Demographic data, surgical techniques, and postoperative complications were recorded. Musculoskeletal Tumor Society (MSTS) functional score and Eastern Cooperative Oncology Group (ECOG) performance status were used for functional evaluation. A Kaplan-Meier survival analysis was used to determine survival rate.

**Results:** Lung cancer, breast cancer, and multiple myeloma were among the three most common primary malignancies. Pathological fractures included 60 subtrochanteric and 57 femoral shaft with 84 complete and 33 impending fractures. Long cephalomedullary nailing, intramedullary nailing, and locking compression plating were performed in 44, 28, 27 cases sequentially. The mean postoperative MSTS score was 20 and ECOG score was 4. The mean oncological survival time was 10.7 months. Patient survival rates were 25.4% after 12 months and 11.8% after 24 months. There were three implant failures, but no significant factor was found after univariate and multivariate analysis.

**Conclusion:** Operative stabilization for metastatic pathological diaphyseal femoral fracture provided early ambulation and acceptable strength during the terminal period of these patients no matter what techniques had been chosen by experienced surgeons.