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Treatment of proximal femur osteomyelitis occurred after proximal femoral nail anti-rotation fixation with antibiotic cement-coated tibia intramedullary nail: A case report

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Introduction: Antibiotic cement-coated intramedullary nails maintain a locally high antibiotic concentration while contributing to bone stability. We present a case of femoral subtrochanteric fracture in a patient with an infected nonunion who was successfully treated for an infection and nonunion using an antibiotic cement-coated tibial intramedullary nail.

Case Report: A 79-year-old woman with a right femoral subtrochanteric fracture underwent internal fixation using Proximal Femoral Nail Antirotation (PFNA). She developed osteomyelitis with nonunion at the surgical site, 10 months postoperatively. A two-stage surgery, including removal of the existing PFNA to treat the infection and stable fixation to treat the nonunion, is generally performed but requires a prolonged hospitalization period. We therefore decided to insert an antibiotic cement-coated intramedullary nail in a one-stage surgery. However, the patient's diaphysis of the femur was too shallow to insert the antibiotic cement-coated intramedullary nail, even when using the smallest femoral intramedullary nail. Stable fixation could not be achieved using an antibiotic cement-coated intramedullary K-wire, thus, we decided to use an antibiotic cement-coated tibial intramedullary nail. After coating the nail with bone cement mixed with antibiotics, bone fixation was achieved by inserting the nail at the site of the PFNA. The patient's symptoms improved, symptoms from the infection disappeared and bone union was confirmed.

Discussion: Osteomyelitis occurred because of postoperative infection following a proximal femoral fracture. Antibiotic cement-coated tibial intramedullary nails are effective option to treat patients with osteomyelitis of the femur and achieve bone union where nonunion persists with a shallow intramedullary femoral canal.

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