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## What are the results of minimally invasive plate osteosynthesis for femoral and tibial comminuted fracture?

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**Introduction & Aim:** Comminuted fractures happen frequently due to traumas and accidents. Recently fixation without opening the fracture site known as Minimally Invasive Plate Osteosynthesis (MIPO) has become prevalent. Due to lacking accurate and evidence-based outcomes on comminute fractures; we performed this study to assess the results and complications of this way of treatment for tibial and femoral comminuted fractures.

**Methods:** In this cross-sectional study; 60 patients treated with MIPO. 11 patients excluded due to lacking adequate follow-ups. Data including union time, infection in the fractured site, hip and knee range of motion and any malunion or deformities like limb length discrepancy collected after the surgery from every patient in every session.

**Results:** 32 and 17 femoral tibial fractures were evaluated respectively. In 48 patients, union was fully completed. Mean union time was  $18.57 \pm 2.42$  weeks. Femur fractures healed faster than tibia ( $17.76 \pm 2.36$  and  $19 \pm 2.37$  weeks, respectively). None of our patients suffered from infections or fistula. The range of motion in hip and knee remained intact in all of our patients. Malunion happened in 3 patients, 10 degree internal rotation in 1 patient and 1 centimeter limb shortening in 2 patients.

**Conclusion:** According to the result of this study, it can be drawn that MIPO is a simple and effective method of fixation for comminuted fractures of long bones. It has a high rate of union with minimal complications. Infection is rare and malunion or any deformity is incredibly infrequent. MIPO appears to be a promising and safe treatment alternative for comminuted fractures.

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