

# TIBIA FRACTURE AFTER TIBIAL CORTEX TRANSVERSE TRANSPORT (TTT) SURGERY: A CASE REPORT

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## Background

Diabetic foot ulcers (DFU) are common complications in patients with chronic DM. Approximately 20% of patients with DFU will require lower extremity amputation. Tibial cortex transverse transport (TTT) technique was established based on distraction osteogenesis. It has been applied to severe and recalcitrant DFU and atherosclerosis obliterans.

## Case report

A 71-year-old male with a past medical history of type 2 diabetes mellitus, right middle cerebral artery infarct, hypertension, and hyperlipidaemia, presented with a right 4th toe gangrene. He underwent right tibial cortex transverse transport (TTT) surgery and tibial cortex transport surgery device was removed 7 weeks after the TTT surgery. He was transferred to inpatient rehabilitation medicine unit 1 week after the removal of external fixator and 8 weeks after TTT surgery. Surgeon allowed partial weight bear on right lower limb with off-loading shoe. After two days of 10 meters ambulation training with walking frame, he complained of worsening pain on right shin area. X-ray of lower leg showed a new fracture extending to the posterior cortex of the tibia shaft.

## Conclusion

Inability to control his weight bearing on right lower due to previous stroke and osteopenia & sarcopenia might be the possible factors which lead to tibia fracture. TTT surgery has emerged as an intervention for severe diabetic foot ulcer to reduce amputation rates. To prevent secondary tibia fracture, delayed weight bearing or reduced weight bearing with patellar tendon bearing orthosis should be considered after TTT surgery if patient has risk of fracture, such as elderly, poor balance control, abnormal gait, and sarcopenia.

**Keywords:** DM, TTT, Tibial fracture, Rehabilitation