Distal Tibia Fracture Osteosynthesis With Minimal Invasive Surgery

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INTRODUCTION:
Minimal invasive surgery (MIS) offers less trauma, shorter hospital stay and better confidence for patients. However, it relies on surgeon’s learning and clinical experiences. In Chang-Hua hospital, more than sixty distal tibia fractures had been treated with MIS and achieved the excellent results.

MATERIALS & METHODS:
Anterior-lateral distal tibia plating was done to the patient with distal tibia of variable pattern, including simple, compound, senile osteoporotic, long spiral, and open fracture with delay osteosynthesis. Autogenous morselized bone graft or fibula strut graft had been used in revision surgeries with non-union. The major wound is about 3-5 cm for plate insertion. Double plating is also for senile osteoporotic fractures.

RESULTS:
Over sixty patients were treated with MIS. One patient with previous infection and non-union accepted revision surgery, and she had skin delay healing and dry eschar but needed no skin graft. Open fracture was treated with stage operation depending on soft tissue condition. Delay operations with simultaneously STSG and ORIF are for those with open type I or II fracture. Figure 1 is an example of surgical wound.

DISCUSSIONS:
For most distal tibia fracture, soft tissue condition is the major concern. Delay surgery for swelling subsidence is the conservative way. However, it usually took 2 more weeks for subsidence and sometimes skin necrosis still happened due to insufficient temporally fixation and compound fracture. With MIS technique, early intervention can be achieved in most patients because reduction and fixation before swelling avoids the skin deterioration by persisted swelling. We reduced the bone, fixed the bone and had a drainage tube to fracture site, these can significantly decompressed the inner pressure to the skin. Our suggestion of the wound size for distal tibia fracture is about 3 cm. Surgical wound within this size had no problem in wound closure even in the very swelling trauma leg.

CONCLUSION:
For distal tibia fracture, an efficient ORIF with early intervention is beneficial. Delay surgery or stage surgery was still the principle for unstable soft tissue condition but MIS did less jeopardize the soft tissue condition.

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