Salvage Strategies for Hindfoot Problems: The Role of TTC Fusion with Retrograde IM Nail

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Tibiotalocalcaneal (TTC) fusion using a retrograde intramedullary nail is an effective salvage option for Charcot arthropathy, failed total ankle arthroplasty, and hindfoot arthritis involving subtalar joint. Compared to other methods such as screw or plate fixation, the main advantage of intramedullary nails is biomechanical stability derived from strong bending stiffness and satisfactory fixation. Intramedullary nail also provides convenience of procedure and high union rate. Recent clinical study reported good or fair clinical outcomes of TTC fusion with retrograde intramedullary nail. Other study reported superior patient’s satisfaction of TTC fusion then ankle arthrodesis. However, as most of the patients who receive TTC fusion are contracted to comorbidities of other medical conditions such as long term diabetes, neuropathy, cardiovascular disease, previous infection history and others perioperative patient management is rather challenging. Previous studies reported risk of nonunion, infection and major amputation, emphasizing identification the patients who have potential risk of complications that may occur. Herein, review of the previous reports and the experience from 34 cases of TTC fusion with retrograde IM nail are presented. We try to identify factors that may influence the surgical outcomes.

Keywords: hindfoot, tibiotalocalcaneal fusion, retrograde intramedullary nail.