

Bilateral Tibiotalocalcaneal Arthrodesis Using Retrograde Nail in Case of End Stage Osteoarthritis with Severe Varus Deformity: A Rare Case Report

¹Shangeetha.T; ¹M. Shahril.J; ¹Azammuddin.A

¹Department of Orthopedics, Hospital Pengajar University Putra Malaysia, Persiaran Mardi - Upm, 43400 Serdang, Selangor, Malaysia.

INTRODUCTION:

Ankle Osteoarthritis (OA) affects about 1% of world population [1]. It is a Chronic disease presents with most common presentation following ankle fractures and chronic ligamentous injury, post traumatic ankle OA about 75–80% of all cases [1]. Primary ankle OA is the most uncommon cause with only 7–9% of the cases being idiopathic OA and 13% secondary to other causes such as rheumatoid arthritis, hemochromatosis, hemophilia, or osteonecrosis [1].

REPORT:

62 years old previously healthy gentleman presented to orthopedic clinic, HPUPM with history of painful bilateral ankle deformity worsening for the past 20years. Patient denies childhood deformity, trauma, history of steroid or traditional medication. On examination, bilateral ankle deformity described as, fixed 20-degree plantarflexion and inversion. Not correctable. Plain radiographs and CT scan revealed bilateral ankle arthritis grade IV with loss of talar dome and severe varus deformity. Bilateral tibiotalocalcaneal (TTC) arthrodesis done with interval of 1year.

DISCUSSION:

Conventionally, ankle arthrodesis was the ideal treatment for end-stage ankle OA [1]. However, in ankle and hindfoot degenerative disease tibiotalocalcaneal (TTC) arthrodesis is additional treatment accomplished using retrograde nail or plate and screws [1]. The main objective of TTC arthrodesis is to fuse the subtalar and tibiotalar joints, designated in attempts to salvage a failed total ankle replacement, loss of talar or distal tibial bone stock, severe hindfoot instability, morbid obesity, severe progressive collapsing foot deformity, and Charcot neuroarthropathy [1]. TTC arthrodesis can be executed via minimally

invasive techniques; nevertheless, complications such as proximal fractures around the nail, nonunion, infections, neurovascular lesions, and rotational alterations reported upto 25% [1]. Healthy subtalar joint, poor bone stock, active infection, and severe distal tibia deformities are contraindication for TTC arthrodesis [1].



Figure 1: Plain radiograph showing end stage bilateral ankle OA with loss of talar dome and severe varus deformity



Figure 2: Bilateral tibiotalocalcaneal arthrodesis with retrograde nail using the fibula itself as an autograft

CONCLUSION:

Bilateral TTC arthrodesis is effective procedure in treating bilateral end-stage ankle arthritis with severe deformity which results in good long term functional outcome and low failure rate.

REFERENCES:

1. Herrera-Pérez M, Valderrabano V, Godoy Santos AL, de César Netto C, González-Martín D, Tejero S. Ankle osteoarthritis: comprehensive review and treatment algorithm proposal. *EFORT Open Rev.* 2022;7(7):448–59.