The Talar Body Prosthesis Treated End Stage Ankle Arthrosis
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Introduction/Purpose: Ankle arthrosis creates patient disability. Ankle arthrodesis is treatment of choice which creates ankle stiffness and arthrosis of neighboring joints. Total ankle replacement can preserve ankle motions but the results at mid and long-term follow up needed further evaluation. Talar body prosthesis (TBP) can provide long-term satisfactory foot-ankle function of the ankle sustaining talar body damages. Due to ankle biomechanics is different to hip and knee joints. So, we inserted TBP for treating end stage ankle arthrosis. The present study evaluated outcomes at 5-10 years of follow up and described surgical technique.

Methods: Between 2001 and 2011, the TBPs were inserted in 23 ankle arthrosis patients. The data were reviewed. We included grade 3 Bargot and Henkemeyer radiographic grading of ankle arthrosis and deformed talar body. The patient with neurological, hip, knee, mid-foot problems which impeded walking ability and age more than 70 were excluded. The patient consisted of 13 females and 10 males. Mean age at index operation and the latest follow up were 54.70 (39-70) and 61.17 (47-75) years old. Mean BMI at the latest follow up was 25.56 kg/m2 (21.89-29.76). Surgical technique included TBP insertion with addressing and applying tensor fascia lata at the articular end of distal tibia. Pre- and the latest follow up AOFAS (American Orthopaedic Foot and Ankle Society) ankle-hindfoot score and radiographs were reviewed. Neighboring joint arthrosis was evaluated by Kellgren-Lawrence radiographic system. The data was statistically analyzed.

Results: Mean follow up duration was 6.48 years (5-10 years). All 23 TBPs maintained congruent talocrural joint. There was no prosthesis failure in term of subsidence into calcaneus and prosthetic stem perforation into talar head at the last follow up. No neighboring joint arthrosis occurred according to the radiographs. The mean range of motion of last follow up was 22.17° of plantar flexion (median 22°, ranged from 15° to 29°) and 0° to 5° of dorsiflexion. The patients could perform activity daily life. Mean AOFAS ankle-hindfoot score at preoperative period and last follow up were 40 points (Median 36, Ranged from 31 to 58) and 74 points (median 75, ranged from 61 to 83), respectively. The statistical analysis showed significant improvement of the score (p<0.001).

Conclusion: TBP can provide satisfactory result of ankle-hindfoot functions at 5-10 years follow up. Advantages of the prosthesis over ankle arthrodesis and total ankle replacement included preservation of the ankle motion without neighboring joint arthrosis and no prosthesis failure.

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