Transfibular Total Ankle Replacement Outcome at 2 Years Follow Up: Non-Designer Results
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Introduction/Purpose: Primary ankle osteoarthritis is very uncommon, in fact 70-78% of the case ankle arthritis has a post-traumatic cause. Ankle arthrodesis (AA), has been considered a reliable procedure for resolution of ankle osteoarthritis. Recent modifications in Total ankle replacement (TAR) designs have challenged the perception that AA is the treatment of choice for end-stage ankle arthritis. Trabecular Metal Total Ankle system is a fixed-bearing prosthesis. The new design is flanked by use of new materials. The tibial articular surface is constructed of highly crosslinked UHMWPE and Trabecular Metal lining the talar and the tibial base component. The purpose of this retrospective study was to show the preliminary result in 31 patients underwent to ankle replacement using Zimmer Trabecular Metal Total Ankle system.

Methods: We retrospectively assessed prospectively collected data on the initial cohort of 31 patients undergoing TAR with this implant. Clinical evaluation was determined pre and postoperatively for a minimum of 24 months after surgery. Pain was rated using the visual analogue scale (VAS). Functional results were assessed as well as ankle range of motion (ROM). Clinical outcomes used were the Short Form SF-12 Quality of Life score, the American Foot and Ankle Society (AOFAS). The imaging follow-up included ankle radiographs done at 6, 12 and 24 months. Radiological parameters were angles (normal values 90 ± 2), (normal value 85 ± 2), (normal values 20 ± 2) and TTratio (normal values: 27% to 42%).

Results: The study included 31 ankles of TM Ankle Replacement in 31 consecutive patients over a period of 2 years (2013–2015). Out of 31 patients, 13 were females and 18 were males (average age 49.4 years, range, 30–75 years). All procedures were performed by a single surgeon. The ROM plantarflexion and dorsiflexion improved significantly (p <0.001) at the last follow up. The mean VAS pain score decreased significantly from 7.42 points (range 4 – 10 points) preoperatively to 1.42 points (range, 0 - 3 points) at the time of the latest follow-up (p <0.001). AOFAS and SF-12 scores both improved from postoperatively to the last follow up. (Table 1). We noted stable implants based on our radiographic parameters, with no corrections loosening. (Table 2)

Conclusion: Our study evaluated the new fixed bearing Zimmer TM total ankle replacement approved by the US FDA in 2012 and is the first studies to evaluate the clinical and radiographic outcomes of this prosthesis. Of 31 ankles treated with a new transfibular arthroplasty system, only two asymptomatic fibular delayed union were registered. No implant failure was noted at 24 months postoperatively. Four ankles underwent secondary surgery for symptomatic fibular hardware with good outcome. The findings suggest that this total ankle system is safe and effective at short-term follow-up.

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