Retrospective analysis of 5 years results of first metatarsophalangeal joint arthroplasty, Single surgeon series.

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Introduction/Purpose: First Metatarsophalangeal joint (MTP) osteoarthritis is a common forefoot disease. It leads to joint surface destruction and erosions limiting function and causing pain. The disease can be classified to mobile and non mobile or traumatic and atraumatic disease. The gold standard for treatment of stage III and IV remains MTPJ arthrodesis. In this case series we demonstrate MTPJ arthroplasty in mobile MTPJ with stable first interphalangeal joint (IPJ) can achieve short and medium-term results that are comparable to arthrodesis with high satisfaction rate.

Methods: Retrospective analysis of 48 MTPJ arthroplasties performed by single surgeon in the period between 2011 to 2016. Patient were included if they had mobile first MTPJ osteoarthritis in the absence of IPJ hypermobility. The Surgical procedure included resurfacing the 1st metatarsal head using Arthrosurface® Hemicap implant and Extensor Digitorum Brevis (EDB) graft on the phalangeal surface of the joint. Radiological p arameters collected using weight bearing x-rays prior to surgery, immediate radiological correction after surgery, 6 month and 2 years radiological analysis following the index surgery. Physiotherapy data were collected by senior physiotherapist prospectively during the time of postoperative rehabilitations and it included AOFAS and VAS scores.

Results: 48 patients underwent 1st MTP joint arthroplasty using Arthrosurface® Hemicap implant for the metatarsal head with EDB graft on the phalangeal aspect. 44 patients had primary OA of the 1st MTP joint, 4 were conversion of MTPJ arthrodesis to arthroplasty and 3 were treated for non-union of MTPJ arthrodesis. Average postoperative ROM in the sagittal plane was 30 degrees and no valgus deformity in the coronal plane. 3 Patients (0.68%) had residual pain following the surgery due to soft tissue impingement and required further surgical intervention. 1 patient remained dissatisfied after the revision surgery.

Conclusion: In short to medium-term follow up, the first MTP joint arthroplasty with Arthrosurface® implant and EDB graft provides an excellent functional outcome in the management of moderate to severe OA. In some selected cases this can be an option for treatment of patient with failed arthrodesis or patients requiring the reversal of the arthrodesis due to other issues.