

## **Customized Metal Implants are a Viable Solution for the Treatment of Osteochondral Defects of the Talar Dome**

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**INTRODUCTION:** Osteochondral Defects (OCDs) of the talar dome still represent a challenge in daily orthopaedic practice, and their optimal treatment is currently debated. In this pilot monocentric study, second-generation resurfacing implant in patients affected by talar dome OCDs results in a significant improvement of patient outcome measurements with good implant safety.

**METHODS:** We enrolled 20 consecutive patients undergoing metal resurfacing of the medial or lateral OCDs of the talar dome at one institution. Patients that have exceeded the ideal age for biological treatments, or had failure, patients not eligible for total ankle replacement (TAR) or Ankle Arthrodesis (AA), were considered good candidates. Subjects have been evaluated clinically and radiographically before the treatment and at 3, 6, 12, and 24 months after surgery. The clinical-functional outcome was measured with FAOS score and EQ-5D-5L questionnaire. No patients were lost to follow up.

**RESULTS:** The demographics and comorbid conditions known to increase risk of failure of the implants were similar in all patients. Results after 2 year demonstrated substantial patient satisfaction (17 very satisfied, 2 satisfied, 1 unsatisfied). Clinical-functional outcomes showed significant improvement in local symptoms. FAOS improved from 50.8% ± 9.5% to 91.8% ± 8.2% (p-value <0.001), and quality of life in EQ-5D-5L improved from 0.06 to 0.73 (p-value <0.01). The recorded complications were 1 case of intraoperative lesion of the Posterior Tibialis tendon (5%), 1 case of delayed wound healing (5%) without signs of local infection, and 1 case (5%) of revision surgery with implant's removal and subsequent TAR.

### **DISCUSSION AND CONCLUSION:**

This pilot study showed significant improvement in local symptoms treatment with improved clinical and functional scores (FAOS and EQ-5D-5L), a considerable patient satisfaction, and low risk of revision surgery or intraoperative complications. Even if the customized focal talar dome resurfacing implant could be only a bridge between biological treatment and TAR or AA, we can conclude that surgery has the potential to give patients significant pain relief, functional improvement, and an increased perception of quality of life for two years after surgery.