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Medial opening wedge high tibial osteotomy with the navigated iBalance HTO system and early weight-bearing: Evaluation of precision and maintenance of correction after 1 year

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Purpose: Safety and stability of the Arthrex iBalance HTO system has been demonstrated using standard surgical techniques and conventional postoperative rehabilitation protocols. The purpose of the current study was to investigate the accuracy and stability of the osteotomy following iBalance implantation using a minimally-invasive, navigated surgical technique, in combination with an accelerated rehabilitation protocol.

Methods: A prospective, observational study of 20 consecutive patients undergoing medial opening HTO with the iBalance implant and a minimally-invasive, computer-navigated surgical technique was conducted. Intraoperative stressed hip-knee-ankle (HKA) angles measured with navigation were compared to 2 weeks postoperative HKA angles measured on long leg radiographs to determine the accuracy of the surgical technique. The maintenance of correction was assessed to 1 year postoperative. Time to union and full weight bearing and pre- and

postoperative patient-reported outcome measures (PROM) were also evaluated.

Results: All knees were corrected to valgus, with the target correction of 2o to 3o valgus achieved for 63.2% of patients. No significant differences were observed between mean intraoperative stressed HKA and mean postoperative HKA angles. The lateral cortical breach occurred in one patient postoperatively; however, no additional complications arose throughout the study period. PROM demonstrated a significant reduction in pain scores and increased mobility between 6 weeks to 3 months postoperative. The mean deviation of correction was $1.4^{\circ} \pm 1.7^{\circ}$ at 1-year post-surgery.

Conclusion: Intraoperative use of computer navigation was able to accurately reproduce pre-planned correction angles, with the maintenance of tibial correction over 1 year using the iBalance in combination with an accelerated rehabilitation program.

Biography

Rohit Kulkarni has completed both his diploma and degree in orthopaedics from renowned institutes in India. He has completed board certified fellowships from Australia and which are accredited by the Australian Orthopaedic Association. He has international journal publications and has paper and poster presentations across various orthopaedic conferences in India. He is currently practicing as a Consultant Orthopaedic Surgeon in Pune and is the Head of Department of Orthopaedics at Om Hospital, Pune. He serves as a panel consultant in the Department of Orthopaedics at MJM Hospital, AIMS Hospital and Jupiter Hospital in Pune, India.

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