#1608 - Clinical Study / Free Papers

No Difference Of Gait Parameters In Patients With Image-Free Robotic-Assisted Medial Unicompartmental Knee Arthroplasty Compared To A Conventional Technique: A Randomized Controlled Trial.

Orthopaedics / Knee & Lower Leg / Joint Replacement - Primary

Cécile Batailler[1], Timothy Lording[2], Alexandre Naaim[3], Laurence Cheze[3], Elvire Servien[4], Sébastien Lustig[4]

1. Croix Rousse Hospital, Lyon, France
2. Melbourne Orthopaedic Group, Melbourne, Australia
3. IFSTTAR, LBMC UMR_T9406, Lyon, France
4. Croix Rousse hospital, Lyon, France

Keywords: Unicompartmental Knee Arthroplasty, Robotic-Assisted Surgery, Gait Analysis, KneeKG, Forgotten Joint Score

Background
In recent studies, robotic-assisted surgical techniques for unicompartmental knee arthroplasty (UKA) have demonstrated superior implant positioning and limb alignment compared to a conventional technique. However, the impact of the robotic-assisted technique on clinical and functional outcomes is less clear.

Objectives
The aim of this study was to compare the gait parameters of UKA performed with conventional and image-free robotic-assisted techniques.

Study Design & Methods
This prospective, single center study included 66 medial UKA, randomized to a robotic-assisted (n=33) or conventional technique (n=33). Gait analysis was performed on a treadmill at 6 months to identify changes in gait characteristics (walking speed, each degree-of-freedom: flexion–extension, abduction–adduction, internal–external rotation and anterior-posterior displacement). Clinical results were assessed at 6 months using the IKS score and the Forgotten Joint Score. Implants position was assessed on post-operative radiographs.

Results
Post-operatively, the whole gait cycle was not significantly different between groups. In both groups there was a significant improvement in varus deformity between the pre- and post-operative gait cycle. There was no significant difference between the two groups in clinical scores, implant position, revision and complication rates.

Conclusions
No difference of gait parameters could be identified between medial UKA performed with image-free robotic-assisted technique or with conventional technique.