

Joint Event

11th International Conference on

OSTEOPOROSIS, ARTHRITIS & MUSCULOSKELETAL DISORDERS

&

10th INTERNATIONAL CONFERENCE ON ARTHROPLASTY

December 04-05, 2017 | Madrid, Spain



E Krishna Kiran

Maxcure Hospitals, India

The relationship of the posterior condylar axis and Whiteside's axis in various osteoarthritic Indian knees undergoing primary total knee arthroplasty: A computer navigation based study

Aim: In varus osteoarthritic knees using Computer Assisted Surgery (CAS), assess the correlation between the degree of preoperative varus deformity, both in extension and in flexion, and the degree of external rotation required to align the femoral component with Whiteside's axis.

Material & Methods: This was a single centre computer navigation based study of 106 consecutive Indian varus osteoarthritic knees undergoing primary Total Knee Arthroplasty(TKA). The angle of rotation between the Posterior Condylar Axis (PCA) and Whiteside's line was calculated using CAS and the measured external rotation was set using the 4-in-1 cutting block. The nature of the anterior cut, notching of the lateral or medial cortex and the need for lateral retinacular release were recorded. The efficacy of CAS in setting optimal femoral component rotation is not clear. Setting a fixed rotation of three degrees from PCA may lead to rotational malalignment in several patients. The aims of this study were to establish the relationship between Whiteside's axis and the PCA to address issues with patellar tracking. All collected data were tabulated and statistically analyzed using SPSS13.0 software. The 2-tailed test was used to establish correlation.

Results: The mean femoral component external rotation with respect the degree of varus deformity in extension/ flexion and external rotation ($r = 0.225, 0.477$).

Discussion: The external rotation with respect to the posterior condylar axis to align the femoral component to Whiteside line varies with each knee (range: 0-14 degrees). The external rotation required in a varus knee increases with the degree of varus deformity in extension as well as in flexion. Computer-assisted navigation helps in obtaining an optimal rotational alignment of the distal femur when Whiteside line is taken as a reference.

Recent Publications:

1. Kumar R, Kiran EK, Malhotra R and Bhan S (2002) Surgical management of the severely displaced supracondylar fracture of the humerus in children. *Injury* 33(6):517-522.
2. Bhan S, Malhotra R and Eachempati K K et al., (2004) Midterm Comparative analysis of IB- II versus LCS at minimum 4.5 years follow up. *Journal of Bone and Joint Surgery* 86(11):2431-4.
3. Malhotra R, Bhan S and Eachempati KK (2005) Recurrent hemarthrosis following total knee arthroplasty due to isolated pf3 availability defect. *Journal of Bone and Joint Surgery* 87-B: 1549-1552.
4. Bhan S, Malhotra R and Eachempati KK (2006) Prospective evaluation of total knee arthroplasty without patellar resurfacing in severely degenerated knees with rheumatoid arthritis: A midterm follow up study. *Clinical Orthopaedics & Related Research*. 450:157-163.
5. Bhan S, Eachempati KK and Malhotra R (2008) Primary cement less total hip arthroplasty for bony ankylosis in patients with ankylosing spondylitis. *Journal of Arthroplasty* 23(6):859-866.

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Biography

E Krishna Kiran is a fellow in Computer Assisted Hip and Knee Arthroplasty, Germany. He is an alumnus of the prestigious AIIMS, New Delhi. He has more than 19 years of experience in Primary, Revision Hip and Knee Arthroplasty and Complex Trauma. He specializes in minimally invasive computer navigated hip and knee replacement, revision hip and knee replacement and pelvis acetabular trauma. Apart from being a Co-Editor for International Book on Sports Medicine, he has published papers in *JBJS Am*, *JBJS Br*, *CORR*, *Journal of Arthroplasty*. He is also a renowned faculty for his specializations in India and abroad.

kke1975@gmail.com

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