

Provisoire

ORIGINAL RESEARCH

The relationship between varus or valgus knee deformity and coronal laxity of 450 total knee arthroplasties

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BUY

 Metrics

Abstract

Background:

Knee navigation translates coronal stress laxity of the mechanical femorotibial angle (MFTA) into numerical values quantifying exerted load on the knee during varus and valgus stress assessments. Two experienced surgeons assessed all knees using an identical technique prior to navigated total knee arthroplasty (TKA) implantation. Our questions were: (1) is there a relationship between varus/valgus stress angles and MFTA in maximal extension (unstressed knee alignment); (2) is the relationship between varus/valgus stress and MFTA in maximal extension (unstressed knee) the same for all preimplant knee deformity?

Methods:

Four hundred and fifty navigated TKAs were reviewed. Three measurements were taken following the same sequence: MFTA without any stress in maximal extension, and then varus and valgus stress angles in maximal extension. Varus/valgus angles were plotted with respect to preimplant MFT angle in maximal extension.

Results:

Three groups were identified: Group A for MFTA in extension of less than 10 degrees varus, Group B between limits of 10 degrees of varus and 7 degrees of valgus deformity of MFTA in maximal extension, and group C for MFT angles in extension greater than 7 degrees of valgus. A and C trend lines drifted away from group B patterns.

Conclusions:

Two independent series of knees assessed by two surgeons revealed similar relationships between varus/valgus stress angles and unstressed knee MFTA in maximal extension between 10 degrees of varus and 7 degrees of valgus deformity. This may explain the small amount of soft-tissue release needed in most TKAs falling within this range.