

Perception of knee alignment in TKA for varus and valgus osteoarthritis.

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INTRODUCTION: Knee alignment significantly influences the satisfaction and functional outcome of total knee arthroplasty. Understanding patients' perceptions of their knee alignment compared to objective assessments is crucial for meeting patients' expectations. In this study, we examined the self-assessed knee alignment of patients pre- and postoperatively in comparison to their actual radiographic alignment.

METHODS: A total of 136 patients (mean age: 65.5, range: 46 to 85 years) were evaluated. As part of his clinical practice all patients were asked to judge their knee before and after surgery using a rating scale ranging from straight, bow legged, very bow legged, and to knocked knee, to very knocked knee. Hip to ankle standing films were assessed retrospectively and knees with a measured alignment of $>10^\circ$ varus were categorized as severe varus, 2.1° - 10° varus as varus, 2° varus - 2° valgus as neutral, 2.1° - 10° valgus as valgus and more than 10° valgus as severe valgus. Patients were operated depending on their preoperative alignment with restricted kinematic, mechanical, or restricted inverse kinematic alignment targets.

RESULTS:

Before surgery 14.3% of patients with severe varus deformity, 54.9% of patients with varus deformity, 82.4% of patients with neutral alignment, 12.0% with valgus alignment and no patient with severe valgus deformity considered their knees as straight. Of the patients with valgus or severe valgus deformity all patients wished to have a straight knee after surgery. Of the patients with varus or severe varus deformity 92.5% wished to have straight knees after surgery, 5% wished to keep bowed legs to match the other side, and 2.5% had no preference.

Postoperatively patients with preoperative varus had up to 5 deg. mechanical varus alignment (1 patient) postoperatively and all patients considered their knees as clinically straight after surgery. Patients with valgus alignment considered their knees straight up to 2.9 deg. of postoperative valgus (1 patient) deformity.

DISCUSSION AND CONCLUSION:

Most patients undergoing total knee replacement wish to have straight knees after surgery. However, patients are likely to consider some varus alignment as straight. This is most common in patients with up to 5 degrees of varus deformity suggesting that some restricted kinematic or inverse kinematic alignment with overall varus alignment up to 5 degrees of varus, might satisfy the universal patients' desire for straight knees while minimizing the need for soft tissue balancing. In contrast, patients with valgus deformity, are sensitive to any remaining valgus deformity and care should be taken not to exceed 2-3 deg. of valgus.