Changes in the Posterior Tibial Slope among Patients undergoing Medial Unicompartmental Knee Arthroplasty do not affect the Medial Proximal Tibial Angle

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The authors report no conflict of interest.

Background

Recommendations regarding the modification of the posterior tibial slope (PTS) in medial UKA vary among knee system with most recommending a specific target PTS. [1]

Given its high variability, this often results in a significant change of patients' PTS. [2]

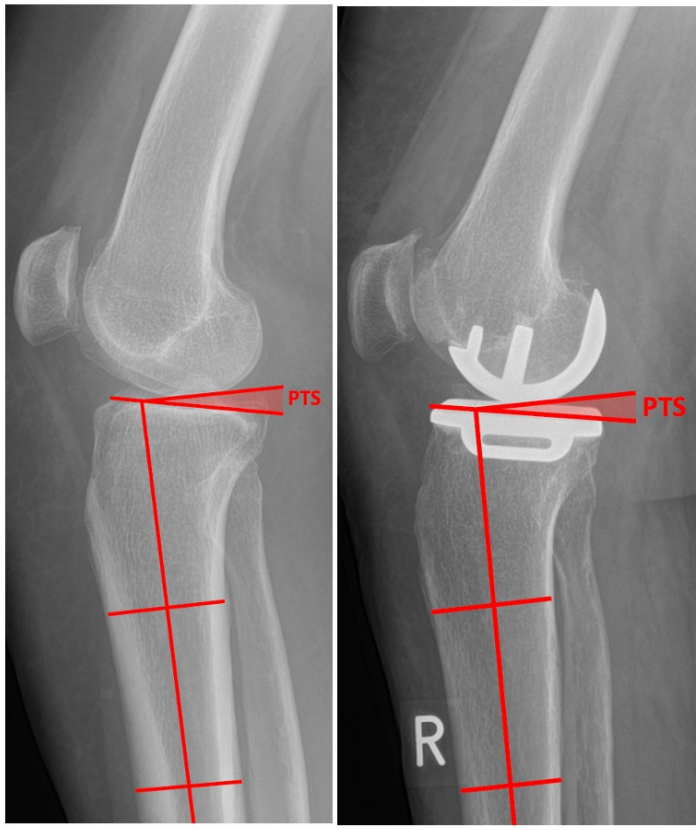
Research Question

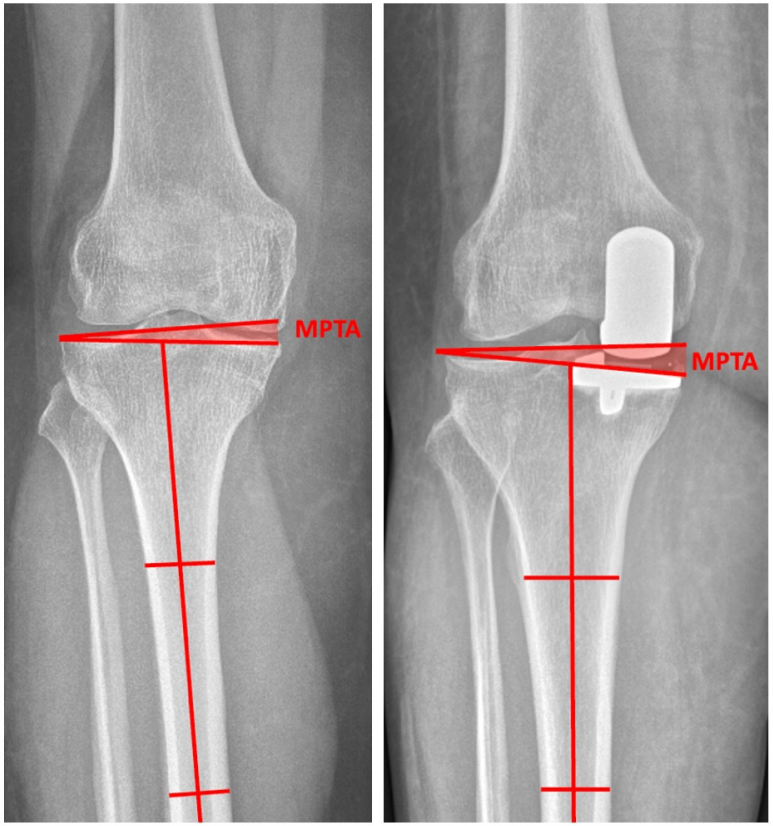
Does a significant change in PTS during UKA implantation further impact the coronal alignment of patients' knees, specifically the MPTA?

Methods

1. **96 patients** with UKA (Oxford Partial Knee; Zimmer Biomet)
   Aim: 7° postoperative PTS
2. **Measurements of pre- and postoperative PTS and MPTA** according to Dejour and Bonin [3] (PTS) and Petersen and Engh [4] (MPTA)
   by two observers
3. **Differences between pre- to postoperative and postoperative to 7°**
   tested for significance using t-Tests
4. **Correlation between PTS and MPTA change**
   tested using Pearson Correlation Coefficient

Measurements PTS and MPTA





Results

Parameter	Preoperative	Postoperative	Change	p-value
PTS	9.3° SD 3.4°	7.3° SD 2.2°	2° SD 3.8°	< 0.001
MPTA	85.4° SD 2.3°	84.1° SD 2.6°	1,3° SD 2.5°	< 0.001

All values represent means with standard deviation in brackets

Pearson **Correlation** Coefficient between **PTS** and **MPTA Change**: 0.05

Cases with **postoperative PTS within ± 2° of target** PTS of 7°: 72%

Conclusions

1. **PTS is significantly changed during UKA (3.8° mean)**

2. **MPTA change during UKA is statistically significant, however clinically irrelevant (1.3° mean)**

3. **Significant PTS change during UKA does not correlate with the change in MPTA**

References

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