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The impact of medial opening wedge high tibial osteotomy on patellar height and tibial tubercle – trochlear groove distance: prospective analysis of 54 consecutive cases

Coral Castillejo Iniesta, Giacomo Dal Fabbro, Margherita Bonaiuti, Fabio Norvillo, Claudio Belvedere, Alberto Leardini, Fulvia Taddei, Alberto Grassi, Stefano Zaffagnini.

Ila Clinica, IRCCS, Istituto Ortopedico Rizzoli, Bologna, Italy



Nothing to disclosure



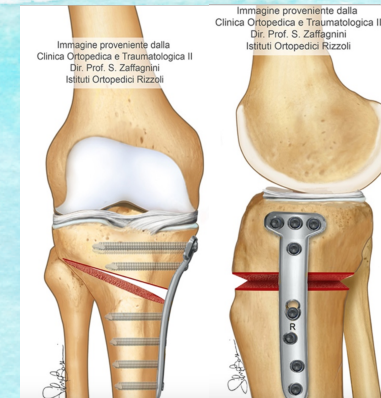
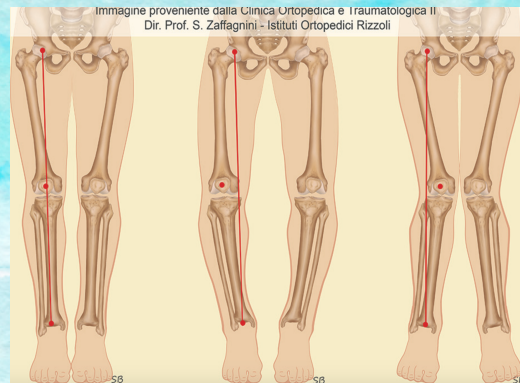
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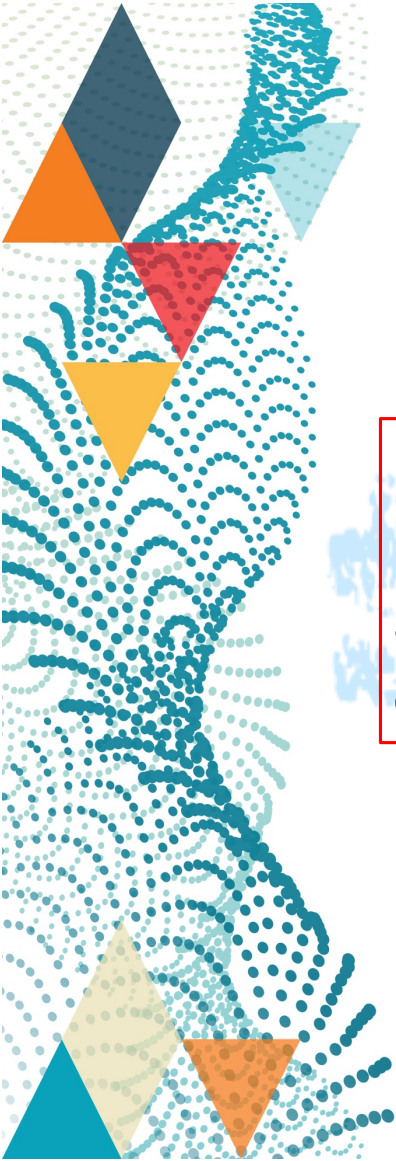


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INTRODUCTION

- Proximal tibial osteotomy (HTO) is a well-established joint preservation treatment for patients with medial knee osteoarthritis and varus malalignment.
- The primary goals of HTO are to delay or prevent knee replacement while correcting malalignment.
- The impact of medial opening wedge HTO on patellar radiological indices remains a subject of ongoing discussion in the literature.





OBJETIVE



To investigate the effect of MOWHTO on PF stability indices by assessing the changes in patellar height and tibial tubercle – trochlear groove (TT-TG) distance.



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MATERIAL & METHODS

Prospective analysis
(2020-2023)

MOWHTO



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Inclusion criteria:

- ✓ Complete medical records
- ✓ Full leg X-rays (standing) and lateral knee X-rays (30° flexion) pre- and post-op,
- ✓ Cone beam CT (weight-bearing, 30° flexion) pre- and post-op (6-12 months follow-up)

... with at least 1 year of follow-up.

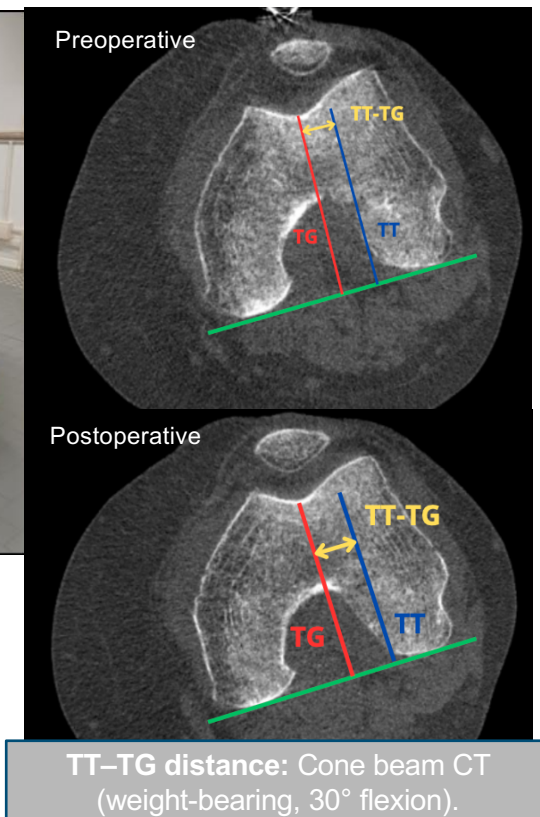
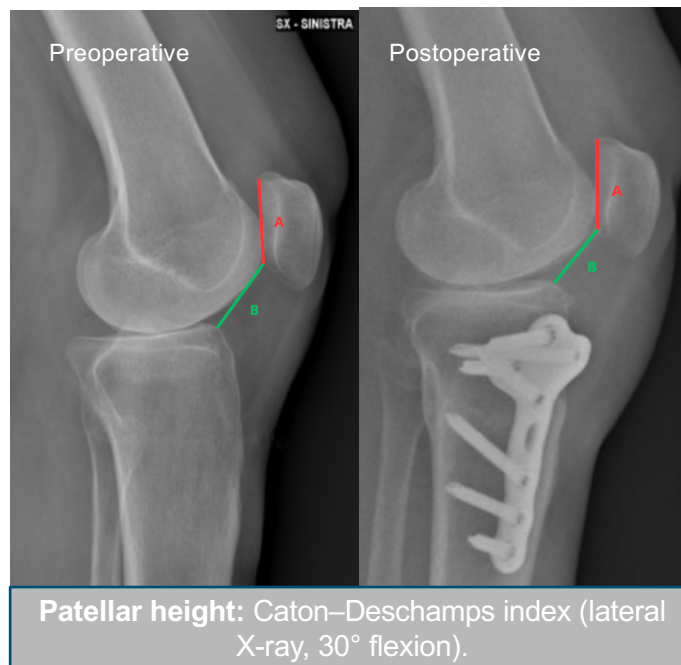
✓ **Analysis:** Wilcoxon-Rank Sum test and effect size calculation.

✓ **Significance level:** $p < 0.05$.

METHODS

✓ **Measurements:** Preoperative and 6-12 months postoperative.

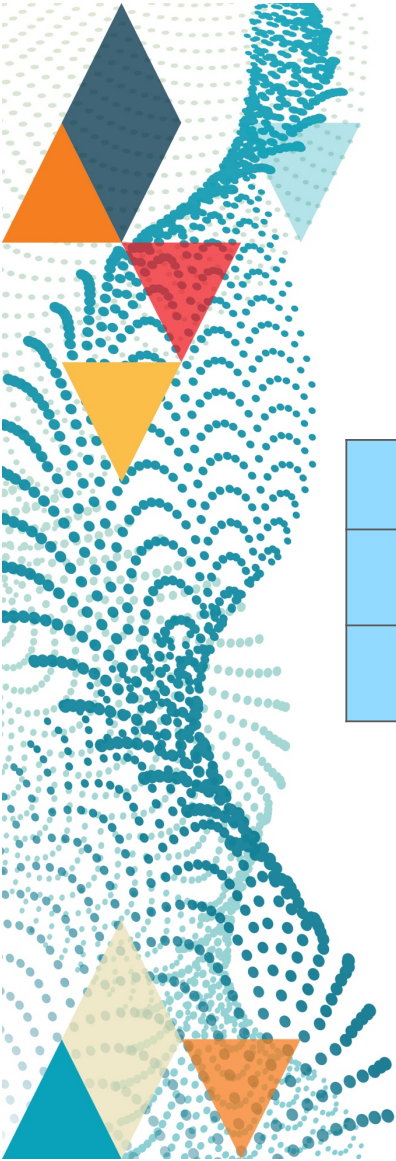
- ❑ **Patellar height:** Caton–Deschamps index (lateral X-ray, 30° flexion).
- ❑ **TT–TG distance:** Cone beam CT (weight-bearing, 30° flexion).



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RESULT

- ✓ **Patients:** 54 included (mean age 53.8 years), 100% follow-up within 1 year post-op.
- ✓ **Corrections:** Mean correction of 6.5° for hip-knee-ankle (HKA) angle and medial proximal tibial angle (MPTA).

	PRE-OP	POST-OP	DIFF [95% CI]	Rank-Biserial Effect size	P-Value
CDI	0.9 [0.7; 1.0]	0.8 [0.7; 0.9]	0.1 [0.0; 0.1]	0.28	<0.001
TT-TG	10.5 [8.7; 13.0]	10.0 [8.2; 12.6]	0.3 [-0.7; 1.4]	0.07	0.661

- ❑ **CDI:** Mean change of 0.1 (>10%) → **statistically significant (p < 0.001)** → the impact of surgical technique.
- ❑ **TT-TG distance:** No significant change (p = 0.661).



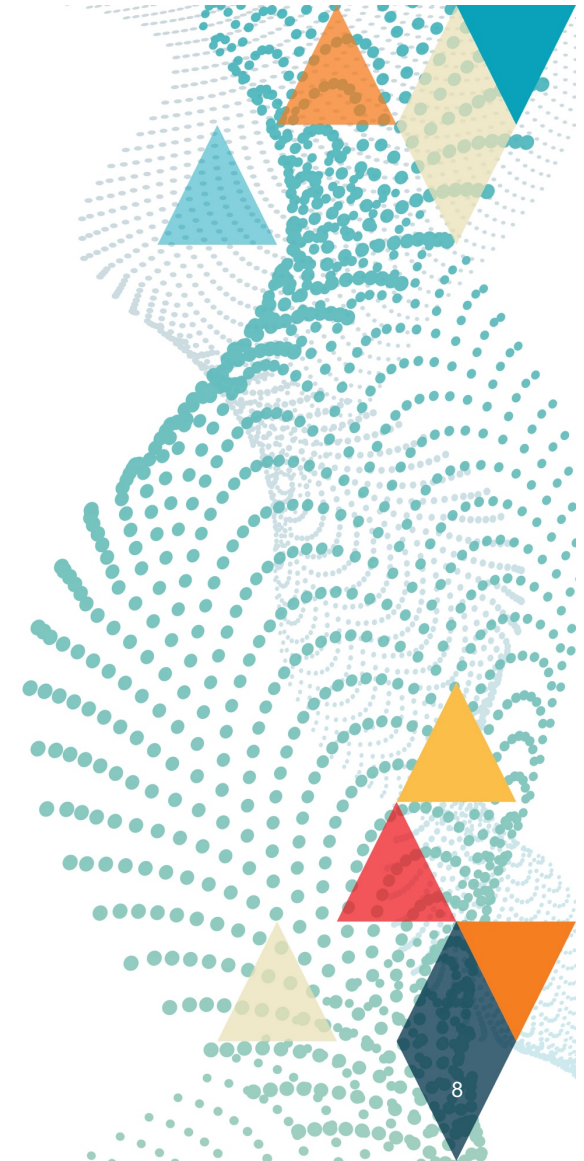
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CONCLUSION

- ❖ OW HTO significantly reduces patellar height (CDI).
- ❖ No significant change in TT-TG distance.
- ❖ Important to consider patellar height impact in patient selection.
- ❖ Supports a personalized approach for medial knee OA and varus knee.



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