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Many thanks for your availability.

Supplement S1.

Supplementary Table S1. Exploratory threshold counts for linear RMSref. Frequency distribution of acquisition-level linear reference-based deviation metrics (RMSref) relative to exploratory descriptive thresholds, which are not validated clinical limits. The table reports the number and proportion of TUPEL 3D acquisitions exceeding linear thresholds of 75 µm, 100 µm, and 150 µm within the total dataset (N = 80), pooled across both implant configurations and operators.

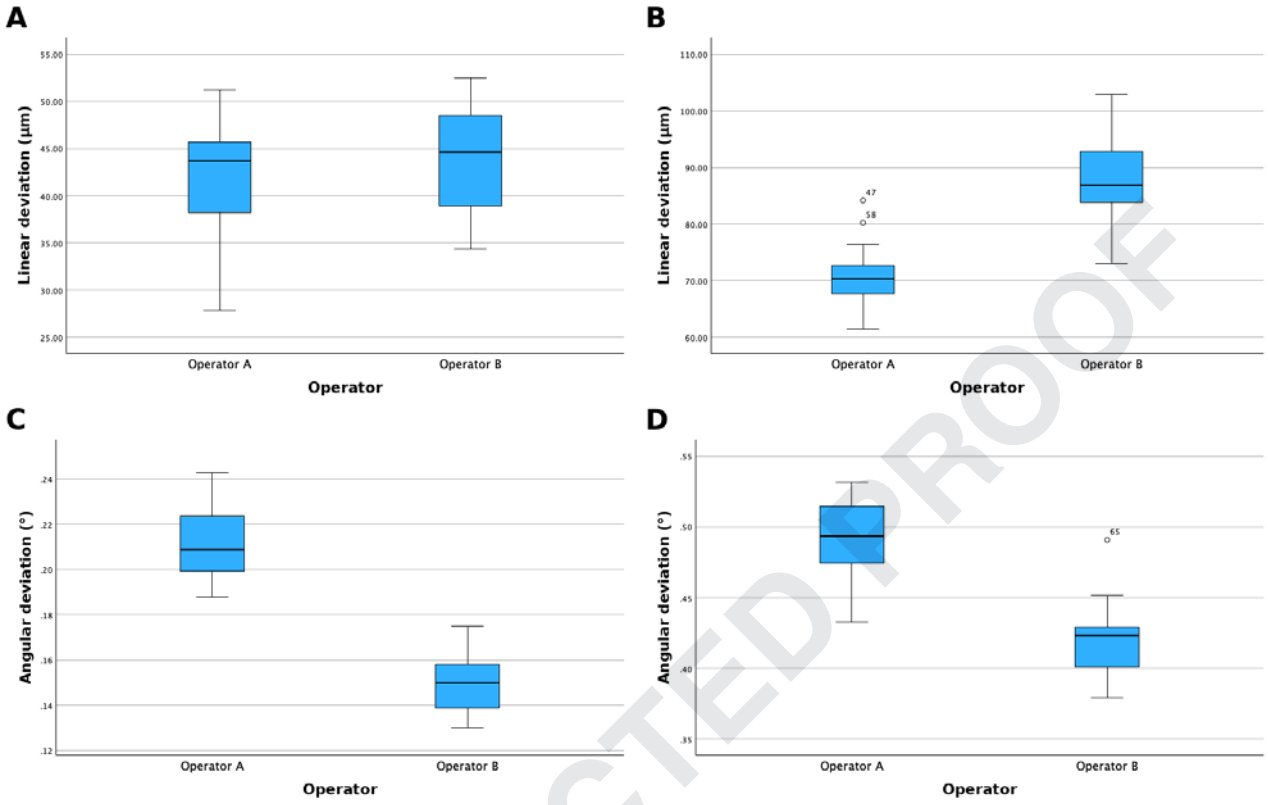
Threshold	n/N exceeding threshold (%)
> 75 µm	40 / 80 (50.0%)
> 100 µm	11 / 80 (13.8%)
> 150 µm	0 / 80 (0.0%)

Supplementary Table S2. Exploratory within-sequence drift of acquisition-level RMSref. Association between acquisition order (1–20, analyzed acquisitions only) and linear and angular RMSref within each operator/configuration sequence, assessed by Spearman rank correlation and ordinary least-squares (OLS) regression. Slopes are expressed per acquisition, in micrometers (µm) for linear and degrees (°) for angular metrics. P values are unadjusted (exploratory analysis). All acquisitions of each operator were completed in a single session, in the order six-implant followed by four-implant configuration.

Configuration	Operator	Metric	Spearman ρ (P)	OLS slope per acquisition (P)	Mean, acquisitions 1–10	Mean, acquisitions 11–20
4 implants	A	Linear RMSref (µm)	−0.44 (.054)	−0.43 (.031)	56.81	51.57
4 implants	A	Angular RMSref (°)	+0.54 (.015)	+0.0013 (.022)	0.302	0.320
4 implants	B	Linear RMSref (µm)	+0.05 (.850)	+0.16 (.331)	54.25	55.78
4 implants	B	Angular RMSref (°)	+0.04 (.870)	−0.00004 (.925)	0.262	0.261
6 implants	A	Linear RMSref (µm)	−0.19 (.420)	−0.22 (.316)	88.22	86.44
6 implants	A	Angular RMSref (°)	+0.11 (.636)	+0.0002 (.810)	0.480	0.479
6 implants	B	Linear RMSref (µm)	−0.58 (.007)	−0.56 (.006)	105.07	99.05
6 implants	B	Angular RMSref (°)	−0.21 (.373)	−0.0010 (.226)	0.418	0.407

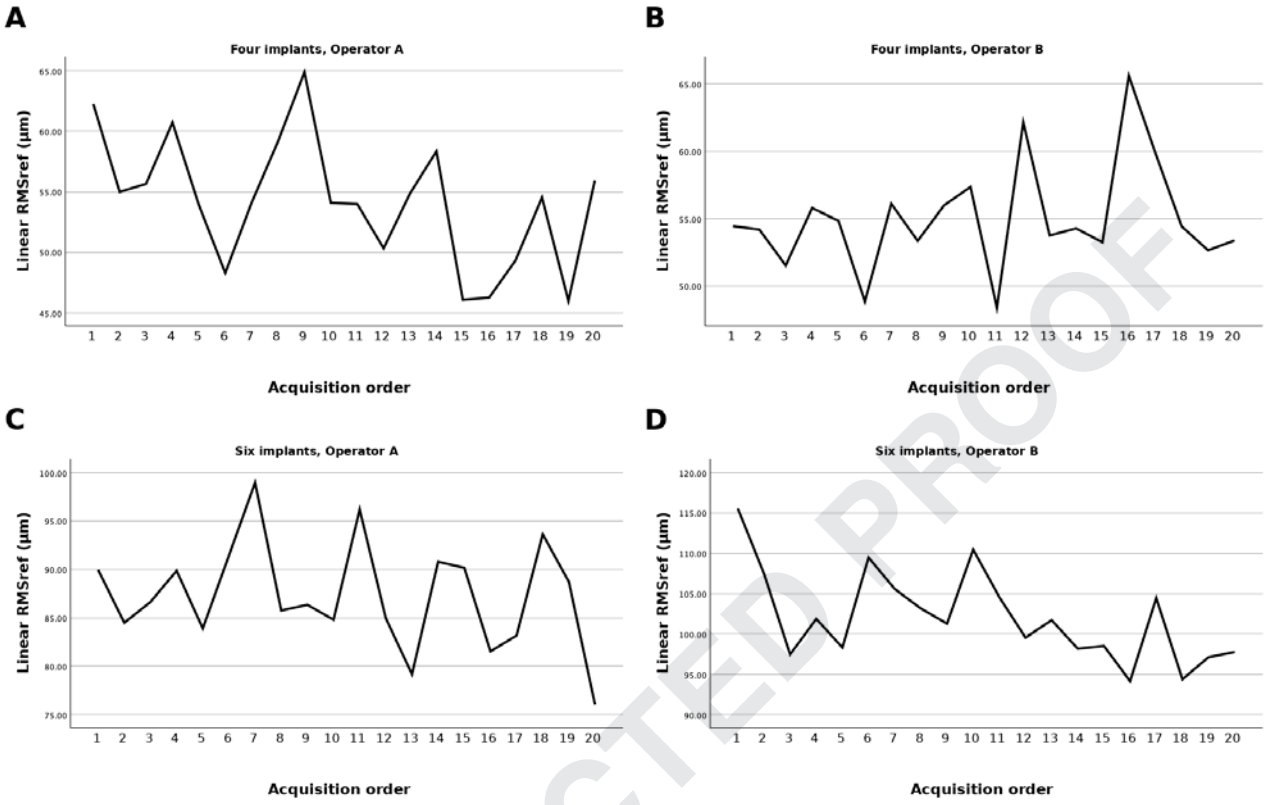
Abbreviations: OLS, ordinary least squares; RMSref, root mean square deviation from the reference values.

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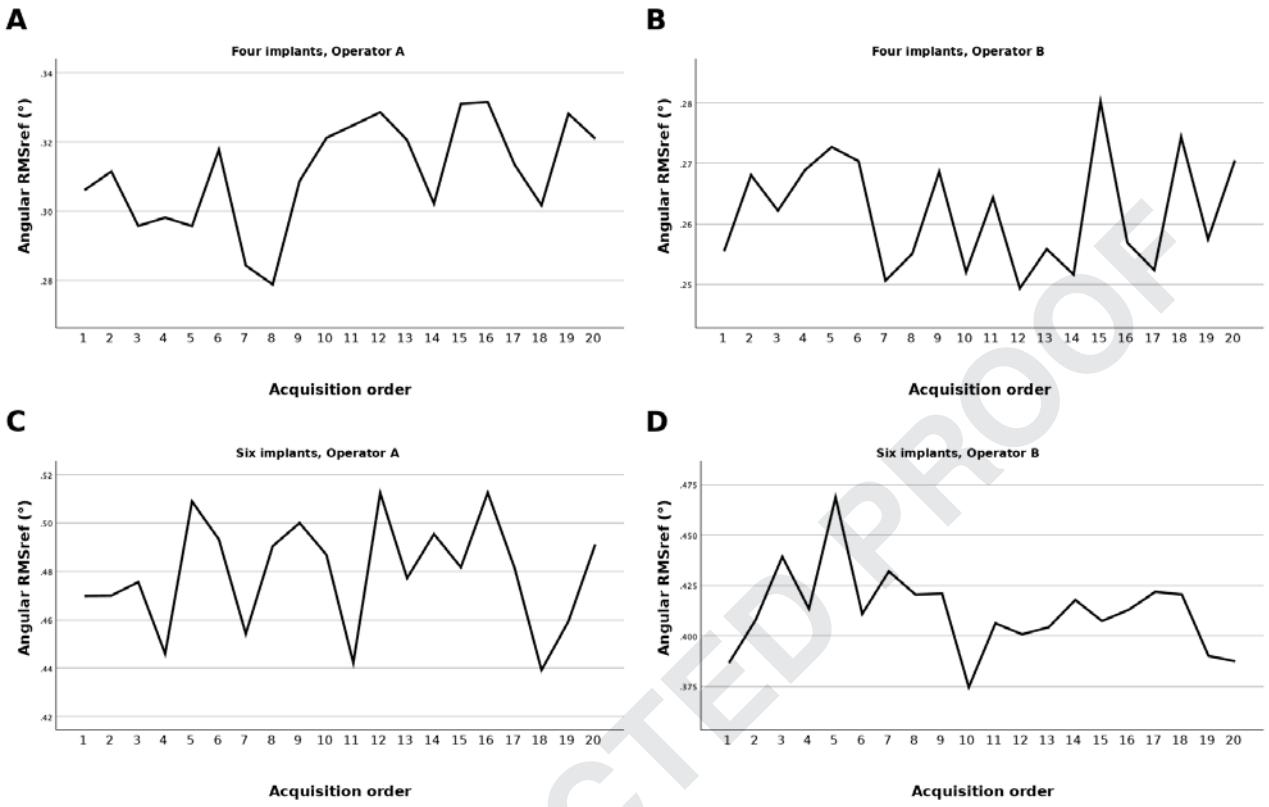
Supplementary Figure S1. SPSS boxplots of anterior-central and posterior-distal absolute deviations in the six-implant configuration, stratified by operator. Panels: A, anterior-central linear deviation; B, posterior-distal linear deviation; C, anterior-central angular deviation; D, posterior-distal angular deviation. Linear deviations are expressed in micrometers (µm) and angular deviations in degrees (°). Boxes show the interquartile range (IQR) with the median as a horizontal line; whiskers extend to the most extreme values within 1.5 × IQR of the box; circles indicate outliers (1.5 to 3 × IQR) and asterisks extreme values (more than 3 × IQR). Numbers next to these symbols are the case numbers of the corresponding acquisitions in the archived dataset.

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Supplementary Figure S2. SPSS run charts of linear root mean square deviation from the reference values (RMSref) by acquisition order (1 to 20, analyzed acquisitions of each operator/configuration sequence). Panels: A (upper left), four implants, Operator A; B (upper right), four implants, Operator B; C (lower left), six implants, Operator A; D (lower right), six implants, Operator B.

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Supplementary Figure S3. SPSS run charts of angular root mean square deviation from the reference values (RMSref) by acquisition order (1 to 20, analyzed acquisitions of each operator/configuration sequence). Panels: A (upper left), four implants, Operator A; B (upper right), four implants, Operator B; C (lower left), six implants, Operator A; D (lower right), six implants, Operator B.

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