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A Novel Guide Indicator for SRS Precision

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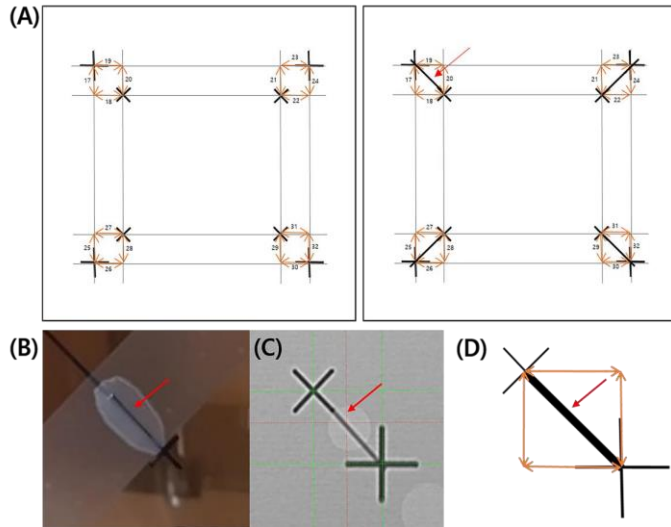
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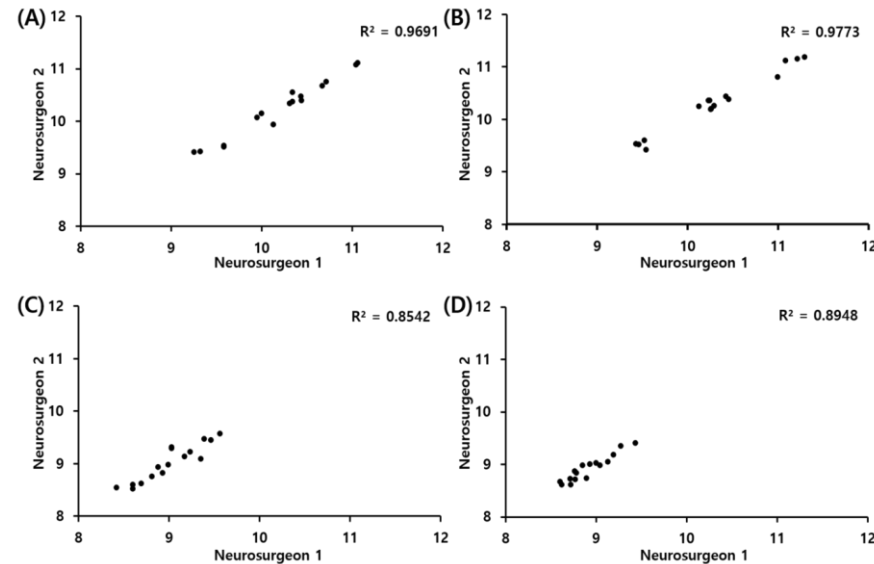
Introduction: This study aimed to develop an angiography guide indicator to improve the accuracy and consistency of SRS across neurosurgeons and to evaluate its performance.

Materials and methods: Scheme before and after guideline installation and enlarged image after guideline attachment.



A. Schematic representations before and after the mounting of guidelines. **B.** Guideline mounted to the indicator. **C.** Gamma plan image taken after mounting the guideline. **D.** Enlarged schematic diagram where guidelines connect “X” and “+.” Red arrows indicate guidelines.

Results: Correlations measured by two neurosurgeons.



A. Conventional indicator anterior–posterior (AP). **B.** Developed indicator AP. **C.** Conventional indicator in the lateral (LAT) direction. **D.** Developed indicator in the LAT direction.

Discussion

The proposed indicator improved procedural efficiency, safety, and planning quality by reducing alignment time and overall procedure duration while lowering radiation exposure. Additionally, enhanced geometric consistency and reduced localization variability enabled more reliable and reproducible treatment planning and execution in SRS.

