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referential and bipolar setting (PRT-DRa) (N=79 - 72,1% in sensitivity and 61,1% in specificity, PPV 68,8%, NPV 64,7%). During DCS were recorded 8,6% of afterdischarges (18/209). Despite no significant differences on accuracy among these three groups (PRT-RR, PRT-DR, PRT-DRa), we observed a statistical significative difference in DCS thresholds depending on cortical area being stimulated, namely primary somatosensory cortex, primary motor cortex or premotor areas (P<0.001).
Conclusions: Overall, PRT in combined recoding modality outperformed the classic reference setting. Anyhow, further data may support our results. Therefore, we suggest to use the combined PRT recording to improve its criteria for CS identification.

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Oral e-Poster Presentations 9 - Booth 2 & Coffee Break, October 3, 2026, 4:30 PM - 5:00 PM
Brain and Spine 6 (2026) 107416
Redefining Intracranial Pressure Targets in Elderly Patients with Traumatic Brain Injury: Evidence for a Lower ICP Threshold to Guide Prognosis

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Optimal intracranial pressure (ICP) targets for elderly patients with traumatic brain injury (TBI) remain unclear, as current thresholds are largely based on younger populations. Age-related physiological changes may alter tolerance to elevated ICP and influence the risk of adverse outcomes at lower levels.
Methods: We retrospectively analyzed 63 elderly patients (age ≥65) with TBI who underwent continuous ICP monitoring during the first 72 hours of ICU admission. We applied segmented logistic regression to identify population-level ICP thresholds associated with mortality and poor functional outcome (Glasgow Outcome Scale [GOS] < 4) at discharge, 6 months, and 12 months. ICP variability was assessed using patient-specific standard deviations, and results were validated in two external elderly TBI cohorts (MIMIC-IV and eICU). Younger cohorts were analyzed for comparison. Longitudinal GOS trajectories were also evaluated.
Results: Outcome risk increased continuously with rising ICP. Inflection points were identified at 11–12 mmHg for poor functional outcome and 15–18 mmHg for mortality. In adjusted models, the odds of death or poor outcome rose steeply above these thresholds. ICP variability showed limited and inconsistent associations with outcome. Similar thresholds were identified across replication cohorts. Functional outcomes remained largely stable between discharge, 6 months, and 12 months, suggesting that early injury burden exerts lasting effects in elderly patients.
Conclusions: In elderly TBI patients, adverse outcomes were associated with ICP values well below the conventional 20-25 mmHg threshold. These findings, replicated across datasets, emphasize the need for age-specific definitions of intracranial hypertension and support further research into individualized pressure targets in this population

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A Mixed Reality–Based Workflow for Preoperative Planning in Cerebrovascular Neurosurgery

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Mixed reality (MR) enables immersive visualization of patient-specific anatomy and represents a promising tool for preoperative planning in complex cerebrovascular neurosurgery. However, its structured integration into clinical workflows remains insufficiently investigated. To evaluate the clinical applicability and perceived usefulness of a mixed reality–based workflow for preoperative planning in cerebrovascular neurosurgical procedures.
Methods: A prospective cohort of 44 patients undergoing cerebrovascular neurosurgery was analyzed. Patient-specific MR holographic models were generated using U-Net–based segmentation algorithms applied to CTA, MRI, and CT perfusion datasets. The reconstructed 3D vascular models were visualized in a head-mounted mixed reality environment and integrated into the preoperative planning process. The impact of MR was assessed qualitatively and quantitatively in terms of: anatomical comprehension,cognitive load reduction, surgical strategy refinement,multidisciplinary communication efficiency.
Results: MR-based planning was applied across a spectrum of cerebrovascular pathologies, including intracranial aneurysms (n = 20), arteriovenous malformations (n = 8), STA–MCA bypass procedures (n = 8), intracerebral hemorrhages (n = 6), and cavernous malformations (n = 2).
MR visualization facilitated intuitive three-dimensional understanding of complex vascular anatomy, supported planning of tailored minimally invasive approaches, enhanced decision-making in corridor selection, and improved surgeon confidence during preoperative preparation. Multidisciplinary discussions benefited from shared holographic visualization.
Conclusions: MR-based preoperative planning supported by machine learning–based segmentation is a feasible and clinically valuable adjunct in cerebrovascular neurosurgery. The workflow enhances anatomical comprehension, reduces cognitive burden, and enables surgical strategy development in an environment closely approximating real operative scenarios.

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Are People of Color and Women Underrepresented in the Naming of Surgical Instruments and Does it Reflect the Diversity of US Medical Students or Population?

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Many surgical instruments are named after the surgeons who invented them – for example, Adson forceps were named after Alfred Washington Adson. Yet, to the best of the author's knowledge, there is no previous research on whether people of color and women are underrepresented in the naming of surgical instruments and whether it reflects the diversity of the US population or medical students.
Methods: The names of the most common surgical instruments were obtained using the American College of Surgeons and the University of Maryland websites. The history of development and naming of each instrument was then researched to determine if that surgical instrument was named after an individual. The biographies of those individuals were then used to obtain the person's gender and race which were also confirmed with the individual's photograph whenever available.
Results: Of the 54 individuals with a surgical instrument named after them, all 54, 100 % were men. No surgical instrument was named after a woman even though women make up 50.4 % of the US population and 47.9 % of US medical graduates. When analyzed by race, 51 of the 54 surgical instruments, 94.4 %, were named after white individuals. Only two, 3.7 %, of the 54 surgical instruments were named after Hispanic individuals even though Hispanics make up 19.1 % of the population and 5.3 % of medical graduates. None of the 54 surgical instruments were named after Black/African American individuals, even though African Americans make up 13.6 % of the US population and 6.2 % of medical graduates. Only one, 1.9 %, of the 54 surgical instruments was named after an Asian individual even though Asians make up 6.3 % of the population and 21.6 % of medical graduates. No surgical instrument was named after Native American individuals even though Native Americans make up 1.3 % of the population and 0.2 % of medical graduates. No surgical instrument was named after Pacific Islanders even though Pacific Islanders make up 0.1 % of medical graduates and 0.3 % of the population. When analyzed by the intersection of race and gender, no surgical instrument was named after a woman of color.
Conclusions: The results indicated that people of color and women are drastically underrepresented in the naming of surgical instruments which is not