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PO-024 - (23968) - IMPROVING NEUROANATOMICAL UNDERSTANDING THROUGH HANDS-ON WHITE MATTER DISSECTION USING THE KLINGLER TECHNIQUE

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Understanding the spatial organization of white matter fiber tracts is fundamental in neuroanatomy and neurosurgery. Conventional anatomy labs provide limited visualization of these structures. The Klingler dissection technique enables the isolation of white matter fibers, offering a three-dimensional view of their orientation and relationship to gray matter and the ventricular system.

This study involved 12 medical students and 35 neurosurgery residents who dissected formalin-fixed human brains using the Klingler method. The dissections took place during an optional neuroanatomy course at the Faculty of Medicine of the University of Porto and a national dissection workshop for neurosurgery residents. Participants used hand-made wooden spatulas to carefully reveal major fiber tracts while minimizing damage. A five-item Likert-type survey was administered to assess the educational and clinical impact of the dissection experience.

Participants unanimously evaluated the dissection as highly valuable. They reported improved understanding of white matter anatomy, including the orientation, depth, and connections of fiber tracts with surrounding brain structures. Neurosurgery residents especially highlighted the utility of the technique in refining their understanding for surgical planning and minimizing postoperative complications.

The Klingler dissection technique significantly enhances neuroanatomical knowledge and practical skills in both medical students and neurosurgery trainees. It facilitates a more accurate spatial perception of white matter architecture, reinforcing its relevance in both education and clinical practice.

Palavras-chave : Neuroanatomy, Klingler Technique, White Matter Fiber Dissection