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THE OPTIC RADIATIONS PERSPECTIVE UNDER THE WHITE FIBER DISSECTION TECHNIQUE: THE RULE IN EPILEPSY SURGERY

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OBJECT: The purpose of this anatomical study was to define more fully the 3D relationships between the optic radiations and the temporal horn and superficial anatomy of the temporal lobe by using the Klingler fiber dissection technique. The results of our dissections were correlated with established surgical trajectories to this region. METHODS: Fifhteen human cadaveric hemispheres were dissected by one of the authors in two different microsurgical laboratories (Hospital Beneficência Portuguesa (SP) e University of Arkansas for Medical Sciences by using a modification of the Klingler method). Spatulas were used to strip away the deeper layers of white matter progressively in a lateromedial direction, and various association, projection, and commissural fibers were demonstrated. As the dissection progressed, photographs of each layer were obtained. Special attention was given to the optic radiation and to the sagittal stratum of which the optic radiation is a part. Our observations agree with two articles published previously: 1) The optic radiation covered the entire lateral aspect of the temporal horn as it extends to the occipital horn. 2) The anterior tip of the temporal horn was covered by the anterior optic radiation along its lateral half. 3) The medial wall of the temporal horn was free from optic radiation fibers, except at the level at which these fibers arise from the lateral geniculate body to ascend over the roof of the temporal horn. 4) The superior wall of the temporal horn was covered by optic radiation fibers. 5) The inferior wall of the temporal horn was free from optic radiation fibers anterior to the level of the lateral geniculate body. CONCLUSIONS: The study of optic radiations through fiber dissection technique is paramount to understand the complex anatomical knowledge necessary in temporal lobe procedures, such as amygdalohippocampectomy.