Teaching NeuroImages: In vivo visualization of Edinger comb and Wilson pencils

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The “direct” and “indirect” pathways play crucial roles in movement disorder pathophysiology. Both traverse from the striatum to the internal pallidum and substantia nigra, the latter detouring to external pallidum and subthalamic nucleus. Anatomically, the pathways manifest within the striatofugal bundle that passes radially through the pallidum in the form of pencil-like tracts (first described by Wilson1; figure 1) before leaving the pallidum toward the substantia nigra. For more information, please refer to the Teaching slides links.lww.com/WNL/A850.
nigra in the form of a comb described by Edinger in 1896\(^2\) (figure 2). A century later, these structures can be visualized in the living human brain (figures 1D and 2A).

**Author contributions**

A. Horn: drafting/revising the manuscript, data acquisition, study concept or design, analysis or interpretation of data, accepts responsibility for conduct of research and final approval, acquisition of data, study supervision. Siobhan G. Ewert: drafting/revising the manuscript, data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data. Eduardo Joaquim Lopes Alho: drafting/revising the manuscript, accepts responsibility for conduct of research and final approval, acquisition and analysis of dark field microscopy footage. M. Axer: data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data. H. Heinsen: drafting/revising the manuscript, data acquisition, analysis or interpretation of data, accepts responsibility for conduct of research and acquisition of data. Erich Talamoni Fonooff: drafting/revising the manuscript, data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data, study supervision. J.R. Polimeni: drafting/revising the manuscript, data acquisition, accepts responsibility for conduct of research and final approval, acquisition of data, study supervision.

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**References**

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