In-Vivo Visualization of Edinger's Comb and Wilson's Pencils

Teaching Neuro*Images Neurology* Resident and Fellow Section



Vignette

- 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.



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- Anatomically, the direct and indirect pathways manifest within the striatofugal bundle that passes radially through the pallidum in form of pencil-like tracts (first described by Wilson1, fig. 1) before leaving the pallidum toward the substantia nigra in the form of a comb described by Edinger in 19042, fig. 2.
- A century later, these structures can be visualized in the living human brain (fig. 1 D; fig. 2 A).

