Wilbrand knee

Wilbrand and Saenger studied optic chiasms after unilateral enucleation, noting inferonasal crossing fibers curved anteriorly into the contralateral optic nerve (Wilbrand knee; figure, A). This explains contralateral superotemporal visual field defects (junctional scotomas) with optic nerve lesions at the chiasmal junction. However, Wilbrand knee may be an enucleation artifact. The anisotropic light-reflecting properties of myelinated axons permitted imaging of normal human chiasms. Thin sections (25 μm) were illuminated and digitally imaged from 3 incident angles. Each of the images was pseudocolored (red, green, or blue) and merged, revealing an anomalously oriented fiber tract (appearing white) that reversed direction at the optic nerve–chiasm junction, found in inferior (figure, C) but not in superior sections (figure, B), consistent with Wilbrand and Saenger’s original description.

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Wilbrand knee

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