Teaching *NeuroImages*: Mind the gap! Postfixational blindness due to traumatic rupture of the optic chiasm

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Figure 1 Postfixational blindness due to traumatic rupture of the optic chiasm

(A, C) Standard perimetry shows complete bitemporal hemianopia. The monocular visual fields of the right eye (blue) and the left eye (red) are superimposed. (B, D) Perimetry during convergence on a near target demonstrates postfixational blindness with a gap between the 2 nasal hemifields (black wedge).

A 59-year-old woman visited the ophthalmologist for a routine examination. Ever since a severe head injury with frontal lobe damage at age 16 years, she had experienced intermittent diplopia and difficulties finding misplaced objects, but worked as a clerk throughout her life. Ocular motility was full with

only slight exotropia, but perimetry revealed complete bitemporal hemianopia (figure 1, A and C). Bitemporal hemianopia is caused by disruption of crossing nerve fibers in the optic chiasm (figure 2), usually due to suprasellar masses, or rarely, following head trauma.¹ Without corresponding retinal

Figure 2 Traumatic rupture of the optic chiasm demonstrated by T2-weighted MRI

Axial (A) and coronal view (B) of the suprasellar cistern: the optic chiasm is split into 2 parts (arrowheads) with no crossing fibers left.

areas, patients are no longer able to align the 2 hemifields, lose stereopsis, and usually develop strabismus. Convergence on a near target induces postfixational blindness with a gap between the 2 nasal hemifields (figure 1, B and D), in which more distant objects disappear.² This unusual visual field defect explains the patient's complaint.

AUTHOR CONTRIBUTIONS

Konrad P. Weber designed the examination setup and wrote the manuscript. Klara Landau examined the patient, made the diagnosis, performed the perimetry, and contributed to the manuscript.

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DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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