Bow-Tie Cupping: A New Sign of Chiasmal Compression

The classic ophthalmoscopic1 and histologic2 pattern of band or bow-tie atrophy in retrograde degeneration of decussating axonal ganglion fibers is well recognized now. Herein, we describe a further sign of chiasmal compression, which may be called bow-tie cupping or horizontal band cupping.

Report of a Case. A 12-year-old boy with a longstanding suprasellar craniopharyngioma compressing the optic chiasm and right optic nerve was examined. Despite debulking surgery, radiotherapy, and repeated aspirations of the cystic component, his vision had deteriorated further. The right eye showed no light perception and a right afferent pupillary defect. The left eye had a visual acuity of −0.16 logMAR (about 20/14) for distance and N4.5 for near. He correctly identified 16 of 17 Ishihara color plates. Goldmann kinetic perimetry of the left eye confirmed a dense temporal hemianopia.

On fundus examination, the left optic disc head showed segmental bow-tie atrophy nasally and temporally, accompanied by an abnormally high horizontal cup-disc ratio of 0.8 (vertical cup-disc ratio = 0.5) (Figure, A). The nasal rim was particularly thinned and showed complete loss of the nerve fiber layer. In contrast, the superior and inferior disc rim segments appeared comparably thick and pink with clearly visible superior and inferior nerve fiber layers and striations. Likewise, the right optic disc showed an increased horizontal cup-disc ratio of 0.8, although the vertical cup-disc ratio was also increased (0.65), giving rise to a more concentric cup compared with the horizontal oval cup of the left eye (Figure, B). As in the left eye, the right optic rim was thinnest nasally. His intraocular pressures have never been elevated on repeated measurements during more than 2 years, ranging between 13 and 17 mm Hg on Pulsair tonometry (Keeler Ltd, Windsor, England) and 10 mm Hg on Goldmann applanation tonometry in each eye.

Comment. In fewer than 10% of patients, compressive lesions of the anterior visual pathway result in nonglaucomatous pathological cupping.3,5 This case illustrates bow-tie or horizontal band cupping with pathological nasal and temporal cupping in addition to band atrophy due to compression of the decussating nasal axonal fibers of the chiasm. As the temporal retinal ganglion fibers do not decussate into the chiasm, they are therefore relatively spared by chiasmal compression, accounting for the relative preservation of the vertical optic disc poles and nerve fiber layer segments and the preservation of the remaining left nasal visual hemifield.3,2,6 Compared with the purely horizontal cupping and segmental bow-tie atrophy seen in the left eye, the generalized optic disc pallor, the rounder cup, and the loss of all discernible nerve fiber striations in the right eye reflect the additional loss of the temporal ganglion fibers in the right eye as a result of right optic nerve

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Regression analyses showed that clinicians in group 2 were 2.23 (95% confidence interval, 1.34-3.70) times as likely to be aware of EBPs as those in group 1 in treating HSV stromal keratitis. Clinicians in group 3 were 2.92 (95% confidence interval, 1.70-5.01) and 2.27 (95% confidence interval, 1.29-3.98) times as likely to be aware of EBPs as their group 1 counterparts in treating HSV stromal keratitis and preventing recurrent HSV stromal keratitis, respectively. Adjusting for demographic and practice characteristics, training was the single most significant predictor of awareness of EBPs across these 3 common clinical scenarios.

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compression, being superimposed on the effect of the pure chiasmal compression seen in the left eye.

In summary, we describe a further sign of chiasmal compressive disease and expand the phenomenon of bow-tie atrophy and nonglaucomatous optic disc cupping seen in conditions with retrograde degeneration of decussating axonal ganglion fibers.

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Clinical Characterization and Immunopathologic Features of Sclerosing Dacryoadenitis and Riedel Thyroiditis

Graves disease and, much more rarely, Hashimoto thyroiditis have well-established associations with proptosis. Less appreciated is that sclerosing inflammation of the lacrimal gland can be associated with Riedel struma (invasive fibrous thyroiditis that preferentially affects young women), both of which can also be components of multifocal fibrosclerosis (MFFS). To our knowledge, no studies exist to date on the comparative immunopathologic features of these 2 involved glands, including the possible presence of IgG4-positive plasmacytes that would provide a link to the newly characterized fibrosing entity of IgG4-related disease.

Report of a Case. A 38-year-old woman developed a tender left upper eyelid mass (Figure 1A) without proptosis over 6 months. Computed tomographic scanning showed unilateral enlargement of the left lacrimal gland (Figure 1B). Her serum IgG4 level was 55.4 mg/dL (reference range, <140 mg/dL; to convert to grams per liter, multiply by 0.01), and antineutrophil cytoplasmic antibody testing results were negative. Riedel thyroiditis lacking palpable nodularity had been diagnosed by biopsy 10 months earlier after causing dysphagia...