Pathogenesis of Orderly Loss of Nerve Fibers in Glaucoma

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Chronic Glaucoma, commonly known as glaucoma, is a misunderstood disease since given a separate entity in the 1850s. Currently, there are many conflicting views of glaucoma but on one issue we have complete agreement: the million or so densely packed nerve fibers (NFs) in the optic nerve head (ONH) are being destroyed in an orderly tandem fashion from peripheral to central, never randomly–a pathognomonic feature. The orderly destruction of NFs is perhaps the only lead we have in solving the mystery of glaucoma, but rarely discussed. If the NFs were not destroyed in a predictable orderly sequence, the role of perimetry in glaucoma would be meaningless.

Various theories have been postulated regarding the pathogenesis of glaucoma, but none of them have addressed the crucial question of orderly destruction of NFs, which can't be ignored. For any glaucoma theory to prevail, it must incorporate the issue of the orderly destruction of NFs otherwise it will be of no value. The 'cupping' theory dating back 160 years and the more recent theories like apoptosis, neurodegeneration, vascular pressure and others fail to answer the question of orderly loss of NFs in glaucoma.

This article examines the prevalent theories of glaucoma in the context of orderly loss of NFs and attempts to describe the hypothesis of the sinking disc and severance of nerve fibers corroborating with orderly loss in glaucoma.

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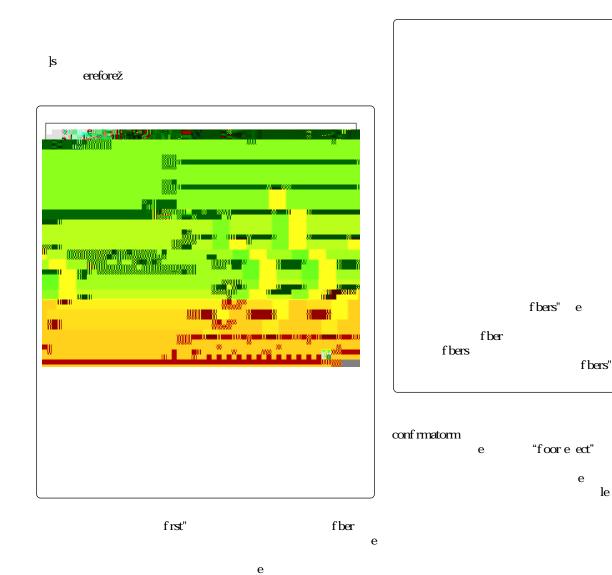
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