Papilledema

- Spontaneous resolution of papilledema and multilayered hemorrhages in Terson syndrome associated with subarachnoid hemorrhage: a case report
- An aggressive, unresected pineoblastoma in an adult woman: the role of exclusive radiotherapy - a case report and literature review
- Lyme Neuroborreliosis Presenting with Isolated Intracranial Hypertension: A Case Report
- The Pathogenesis of Papilledema: Review of the Literature and a New Hypothesis
- Foveal hypoplasia in Myhre syndrome: a novel association
- Ocular Manifestations in Atypical Hemolytic Uremic Syndrome Treated With Ravulizumab: A Case Report and Review of the Literature
- Effectiveness and tolerability of liraglutide as add-on treatment in patients with obesity and high-frequency or chronic migraine: A prospective pilot study
- Comment on: "Diagnostic accuracy of optic nerve OCT and ultrasound in a large paediatric cohort referred with suspected papilloedema and very low rates of raised ICP"

Or papilloedema is optic disc swelling that is caused by intracranial hypertension. The swelling is usually bilateral and can occur over a period of hours to weeks. Unilateral presentation is extremely rare. Papilledema is mostly seen as a symptom resulting from another pathophysiological process.

Papilledema and idiopathic intracranial hypertension

see Papilledema and idiopathic intracranial hypertension

In intracranial hypertension, papilledema most commonly occurs bilaterally. When papilledema is found on funduscopy, further evaluation is warranted as vision loss can result if the underlying condition is not treated. Further evaluation with a CT or MRI of the brain and/or spine is usually performed.

see Foster Kennedy syndrome contralateral papilledema (from elevated ICP)

Etiology

Although many etiologies of papilledema exist, idiopathic intracranial hypertension is the most common [1].

Unilateral papilledema can suggest orbital pathology, such as an optic nerve glioma.

The decision to admit a shunt-treated patient from the emergency department for symptoms related to idiopathic intracranial hypertension (IIH) is challenging. Knowledge of factors associated with the need for admission and/or shunt revision is required. In a study, factors such as male sex, younger age at presentation, lower number of prior emergency department visits, and performance of a diagnostic LP were independent predictors of admission. In addition, papilledema was strongly predictive of the need for shunt revision, highlighting the importance of an ophthalmological examination for shunt-treated adults with IIH who present to the emergency department [2].

Spaceflight associated neuro-ocular syndrome (SANS) is hypothesized to develop as a consequence of the chronic headward fluid shift that occurs in sustained weightlessness.

Laurie et al. exposed healthy subjects (n = 24) to strict 6° head-down tilt bed rest (HDTBR), an analog of weightlessness that generates a sustained headward fluid shift, and monitored for ocular changes similar to findings that develop in SANS. Two-thirds of the subjects received daily 30-min exposure to artificial gravity (AG, 1 g at center of mass, ~0.3 g at eye level) during HDTBR by either continuous (cAG, n = 8) or intermittent (iAG, n = 8) short-arm centrifugation to investigate whether this intervention would attenuate headward fluid shift-induced ocular changes. Optical coherence tomography images were acquired to quantify changes in peripapillary total retinal thickness (TRT), retinal nerve fiber layer thickness, and choroidal thickness, and to detect chorioretinal folds. Intraocular pressure (IOP), optical biometry, and standard automated perimetry data were collected. TRT increased by 35.9 µm (95% CI, 19.9-51.9 µm, $p < 0.0001$), 36.5 µm (95% CI, 4.7-68.2 µm, $p = 0.01$), and 27.6 µm (95% CI, 8.8-46.3 µm, $p = 0.0005$) at HDTBR day 58 in the control, cAG, and iAG groups, respectively. Chorioretinal folds developed in six subjects across the groups, despite small increases in IOP. Visual function outcomes did not change. These findings validate strict HDTBR without elevated ambient CO2 as a model for investigating SANS and suggest that a fluid shift reversal of longer duration and/or greater magnitude at the eye may be required to prevent or mitigate SANS [3].

Diagnosis

Papilledema diagnosis

Differential diagnosis

Papilledema Differential diagnosis.

1)
Reier L, Fowler JB, Arshad M, Hadi H, Whitney E, Farmah AV, Siddiqi J. Optic Disc Edema and Elevated Intracranial Pressure (ICP): A Comprehensive Review of Papilledema. Cureus. 2022 May 11;14(5):e24915. doi: 10.7759/cureus.24915. PMID: 35698673; PMCID: PMC9187153.
2)
Sankey EW, Elder BD, Liu A, Carson KA, Goodwin CR, Jusué-Torres I, Rigamonti D. Predictors of admission and shunt revision during emergency department visits for shunt-treated adult patients with idiopathic intracranial hypertension. J Neurosurg. 2017 Aug;127(2):233-239. doi: 10.3171/2016.5.JNS151303. Epub 2016 Sep 23. PubMed PMID: 27662535.
3)
Laurie SS, Greenwald SH, Marshall-Goebel K, Pardon LP, Gupta A, Lee SMC, Stern C, Sangi-Haghpeykar H, Macias BR, Bershad EM. Optic disc edema and chorioretinal folds develop during strict 6° head-down tilt bed rest with or without artificial gravity. Physiol Rep. 2021 Aug;9(15):e14977. doi: 10.14814/phy2.14977. PMID: 34355874.