connection to the vitreous cavity without any structural deformity of other parts of the globe.

Comment

Peripapillary staphyloma denotes deep fundus excavation surrounding a relatively normal appearing optic disc with normal retinal vasculature and without any retinohoroidal coloboma.¹⁻⁶ The pathogenesis remains speculative. It is thought to be the result of a developmental failure of the posterior sclera from neural crest cells occurring near the fifth month of gestation.^{1,7} Peripapillary staphyloma is generally unilateral with only four bilateral cases reported previously.⁴⁻⁶ The staphylomatous depth varies in size, ranging up to about 10 mm with the fovea often involved by the excavation.⁶

Peripapillary staphyloma is often confused with other excavated congenital optic disc anomalies. In an optic disc coloboma, the optic disc itself is excavated while surrounding inferonasal retinohoroidal or iris tissue defects may also be present. In morning glory disc anomaly, the excavation may be shallower, cone-shaped and containing a centrally located peripapillary glial tuft. In addition, the optic disc may be anomalously. As opposed to the central origin of vessels in peripapillary staphyloma, in morning glory syndrome, the vessels radiate more distinctly from the disc periphery. Other vascular anomalies such as moyamoya disease affecting the carotid arteries, as well as pituitary hormone insufficiencies may be present in morning glory syndrome.⁸⁻¹⁰

Our patient had been referred for evaluation of a suspected optic nerve mass noted on MRI. Detailed examination of the fundi, however, revealed a bilateral peripapillary staphyloma. Furthermore, MRI findings, including the posterior scleral location and connection of the presumed "mass" with the vitreous cavity, associated with sharp internal and external margins, with absence of pathological enhancement all highlighted a peripapillary staphyloma.

Eyes with peripapillary staphyloma may sometimes achieve visual improvement by occlusion therapy, but compliance and visual outcome is often poor.⁶ Often macular involvement or "capture" by the staphyloma is present, limiting final visual outcome. A few reports of retinal detachment associated with peripapillary staphyloma have been published.²⁻⁶ A complete ophthalmic examination and regular follow ups are therefore necessary because of associated ocular disease and refractive errors. Unlike in patients with morning glory anomaly, however, MRI is unnecessary.

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Recurrent hypopyon in chronic anterior uveitis of pauciarticular juvenile idiopathic arthritis

The typical ocular manifestation of pauciarticular juvenile idiopathic arthritis (JIA) is an insidious, non-granulomatous chronic anterior uveitis (CAU). The main risk factors for the development of uveitis in JIA are being female, antinuclear antibody (ANA) positivity, and oligoarticular disease at onset.^{1,2} Even during acute exacerbations of JIA associated CAU with severe anterior chamber (AC) cellular reaction, it is rare for patients to have symptoms and the eye is invariably white.^{1,2} This is in distinct contrast to the acutely symptomatic red eye of acute anterior uveitis (AAU). Hypopyon can form within the AC in severe forms of anterior uveitis, particularly HLA-B27 associated AAU.³⁻⁵ We report a case of CAU in a patient with pauciarticular JIA, which was complicated by the development of recurrent hypopyon.

Case report

A 4 year old white girl first presented with blurred vision in her right eye and was found to have a unilateral, non-granulomatous CAU with extensive posterior synechiae and early band keratopathy. She was initially treated with intensive topical corticosteroids and mydriatics. She was ANA positive and had an ankle effusion, resulting in the diagnosis of pauciarticular JIA associated CAU. Repeated orbital floor steroid injections and systemic low dose methotrexate were required for the control of persistent anterior uveitis activity. Control of AC inflammatory activity was then maintained with regular topical prednisolone and oral methotrexate treatment.

At a routine follow up, 6 months after her initial presentation with CAU, the patient was found to have an asymptomatic inflam-

matory hypopyon and +4 cells in the AC of the right eye without conjunctival injection. There was no history of ocular surgery or trauma and the patient was well systemically. Topical steroids were increased to hourly leading to a significant improvement in the anterior uveitis activity with resolution of the hypopyon and the achievement of a quiet AC with no cells. Further investigations revealed that the patient was HLA-B27 positive and the angiotensin converting enzyme level was not elevated. There were no clinical features of a seronegative spondyloarthropathy. Two months later, the hypopyon recurred upon attempted tapering of topical steroid treatment, once again occurring in a painless "white" eye of CAU (fig 1). The hypopyon again demonstrated therapeutic response to hourly topical steroids and was completely resolved within 1 week. A quiet eye was eventually achieved and maintained with systemic methotrexate and regular topical prednisolone therapy, with last follow up being 9 months after the resolution of the recurrent hypopyon.

Comment

JIA is by far the most common identifiable clinical association of uveitis in children. There have been no previous reports describing the development of hypopyon in the typical clinical phenotype of CAU associated with pauciarticular JIA.^{1-2,5-6} Our case exhibited all of the characteristic clinical features of non-granulomatous CAU of ANA positive pauciarticular JIA, including its insidious onset and asymptomatic chronic disease course requiring long term anti-inflammatory treatment for uveitis control.

Although our patient was also found to be HLA-B27 positive, her clinical features were not consistent with HLA-B27 associated AAU, which includes an abrupt onset of red and painful anterior uveitis that is typically of short duration, predominantly occurring in boys who are ANA negative.³⁻⁶ HLA-B27 antigen is of clinical significance in AAU; however, in contrast, HLA-B27 positivity does not occur more frequently in CAU than in the general healthy population.³⁻⁷ JIA associated uveitis that is positive for both ANA and HLA-B27 appears to be a relatively rare clinical subgroup and whether these represent a distinct clinical entity remains unclear.^{2-6,8} Three patients with ANA positive CAU in early childhood who later developed HLA-B27 associated recurrent attacks of AAU during adolescence or adulthood have been

Figure 1 Slit lamp biomicroscopy examination demonstrating a hypopyon in a painless "white" eye with chronic anterior uveitis that is associated with ANA positive pauciarticular JIA. Note the lack of ciliary conjunctival injection.

reported.⁸ In one of these reported patients, who were positive for both ANA and HLA-B27, hypopyon had been described in association with the recurrent episodes of AAU that developed during adulthood. The hypopyon described in that case occurred in the context of HLA-B27 associated AAU in an adult, distinct from and temporally following, clinical features of childhood ANA positive CAU.⁸ In contrast, our reported patient developed recurrent spontaneous hypopyon (at the age of 5) in the context of the typical, insidious CAU without any clinical features of HLA-B27 associated AAU.

It remains unclear whether the presence of HLA-B27 antigen in our patient is a coincidence or whether it is of pathogenic significance. HLA-B27 antigen may represent a risk factor for the development of hypopyon in anterior uveitis, even in those that do not display the typical phenotype of HLA-B27 associated AAU. It would be of interest to follow the clinical course of our patient into her adulthood to determine whether she later develops ocular or systemic features of HLA-B27 associated AAU. Further studies of a cohort of ANA and HLA-B27 positive children with uveitis are indicated to investigate their clinical phenotype and the potential interaction between ANA and HLA-B27.

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A simple model for teaching indirect ophthalmoscopy

Indirect ophthalmoscopy is a useful technique to allow a wide angle view of the fundus, to screen for retinal disease, and to examine the peripheral retina. It provides a better view of the fundus in patients with lens opacities

Figure 1 Model for practising indirect ophthalmoscopy.

than is allowed by direct ophthalmoscopy. As the threshold at which cataracts are operated in developing countries is changing we have found it important that junior doctors and other eye health workers who select cataract patients for operation can use the instrument.

We use a simple model to teach the technique of indirect ophthalmoscopy. An hour or two with this model gets the beginner "over the hump" of learning how to position and move the light and lens. When the first real patient is examined, the learner can immediately concentrate on the fundus, minimising frustration and time spent shining an annoying light into a patient's eye.

The model is shown in the figure 1. The "eyeball" is a clear glass marble, set into anything that will keep it from rolling, such as a small bottle cap or a hole made in a piece of Styrofoam. Behind the marble, moulded around it, a piece of paper is placed with the smallest print available—the package inserts from prescription medicines work well. Finally, a hole is punched in a scrap of paper to use as a pupil. The optics of the system are excellent for practising indirect ophthalmoscopy and the student can be tested by how many words, letters, or lines he can see compared to the instructor.

Other models have been described before, which are more sophisticated or allow for scleral indentation but the materials may be hard to obtain.¹⁻³ A model equally simple to make as that described here has been proposed⁴; it does not require a glass marble and is good for helping the beginner get oriented, but the marble model provides more of a challenge at learning to view the retina outside the posterior pole.

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In vivo measurement of opacified H60M intraocular lenses using Scheimpflug photography

The Scheimpflug videophotographic camera is a modified slit lamp camera that uses a narrow slit beam and Scheimpflug optics to increase apparent depth of field (enabling simultaneous focusing of the entire anterior segment). Area densitometry measurement of scattered light intensity gives a cross sectional image of the anterior segment. In 1995, Lasa *et al* demonstrated the use of Scheimpflug photography¹ to assess posterior capsular opacification (PCO). Subsequent studies have correlated the values obtained with visual acuity.^{2,3} The system is efficient and reliable for PCO evaluation with good intraobserver and interobserver reproducibility.^{4,5} This has been verified by comparison with histological findings.⁶ Delayed opacification of Hydroview (H60M) intraocular implant lenses (Bausch & Lomb, Rochester, New York, USA) has been reported.⁷ In our patient series we find this to give rise to progressive visual loss and symptoms of glare.

We demonstrate the use of Scheimpflug video-photography (Pentacam, Oculus) for assessment of three cases of opacified H60M intraocular lenses (IOLs). All had uncomplicated cataract surgery with insertion of Hydroview R hydrogel lenses.

Case 1

An 89 year old woman had a +21.50 dioptre IOL in January 2001, for nuclear sclerotic cataract giving Snellen visual acuity of 6/18.