Case report

A case of coats disease and concurrent anisometropic amblyopia

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ABSTRACT

Purpose: The aim of this report was to demonstrate a case of Coats disease in a patient with concurrent anisometropic amblyopia.

Observations: A 10-year-old boy was diagnosed with Coats disease during routine ophthalmic examination. Visual acuity was 20/20 OD and 20/50 OS with cycloplegic refraction of +1.25 (OD) and +3.25 (OS). Examination under anesthesia showed macular exudates in the left eye that encroached near the fovea superotemporally. Despite the poor visual acuity and macular exudates, the foveal architecture of both eyes appeared normal on spectral domain optical coherence tomography. Because of the differing refractive error between the two eyes in the presence of foveal-sparing exudates, anisometropic amblyopia was suspected. After initial laser therapy, the patient was started on a daily patching regimen of the right eye. The patient’s vision steadily improved to 20/25 OS with a final cycloplegic refraction of +1.00 (OD), +3.00 (OS) at 2 years. This report demonstrates the importance of assessing for other common and treatable causes of vision loss in the setting of Coats disease.

Conclusions and importance: This case demonstrates the importance of detecting and correcting for concurrent amblyopia in pediatric retina conditions that may, on fundus examination alone, appear to have a retinal cause for reduced visual acuity.

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1. Introduction

Coats disease is a rare genetic disease leading to telangiectatic vessels, retinal exudates, and vision loss. Contrasting, anisometropic amblyopia is a common cause of monocular vision loss in children and is characterized by differing refractive errors between eyes leading to suppression of visual development and reduced vision. Our report describes a case of Coats disease with concurrent anisometropic amblyopia, highlighting the importance of always assessing for common causes of vision loss.

2. Case report

An otherwise healthy 10-year-old boy was diagnosed with Coats disease during routine ophthalmic examination. Shortly after his diagnosis, he presented to Moran Eye Center for further assessment and management. Visual acuity was 20/20 OD and 20/50 OS with cycloplegic refraction of +1.25 (OD) and +3.25 (OS). An examination under anesthesia (EUA) showed macular exudates in the left eye that extended near the fovea superotemporally (Fig. 1A). Additionally, vascular abnormalities and non-perfused retina were seen in the superotemporal periphery (Fig. 2A). Despite the poor visual acuity and macular exudates, optical coherence tomography (OCT) revealed no architectural abnormalities in the fovea (Fig. 3A and B). Fundus exam of the right eye showed a normal optic disc and macula. Because of the differing refractive error between the two eyes in the presence of foveal-sparing exudates, anisometropic amblyopia was suspected. Laser treatment was performed directly to the vascular abnormalities and as scatter treatment to the avascular areas in the peripheral retina, identified on wide field fluorescein angiography. After initial laser therapy, the patient was started on a daily patching regimen of the right eye.

On follow-up examination 6 months later, visual acuity remained 20/20 in the right eye, and improved to 20/40 in the left eye with cycloplegic refraction of +1.25 (OD), +2.75 (OS). Fundus photos (Fig. 1B) and OCT showed regression of exudates and no evidence of vascular abnormalities. No further laser treatment was performed, and the patient was encouraged to continue daily patching of the right eye. Subsequently, the exudates had completely resolved 2 years (Fig. 1C and 2B) after the initial examination under anesthesia and laser treatment, and the visual acuity had improved to 20/25 in the left eye with a cycloplegic refraction of +1.00 (OD), +3.00 (OS).
The patient provided written consent for publication of this report, including medical record details and photographs.

3. Discussion

This case demonstrates the value of detecting and correcting for concurrent amblyopia in pediatric retina conditions that may, on fundus examination alone, appear to have a retinal cause for reduced visual acuity. In this case, the presence of exudates in the macula suggested a poor outcome, but OCT evidence of a normal foveal architecture supported the later finding that the initially detected hyperopia was indeed refractive and not due to thickened macula.

This report demonstrates the importance of assessing for other common and treatable causes of vision loss in the setting of Coats disease.

Fig. 1. Fundus photos of left eye showing superotemporal macular exudates at presentation (A), resolving exudates 6 months after initial presentation and treatment (B), and completely resolved exudates at 2 years (C).

Fig. 2. Montage of fundus photos of left eye at initial presentation showing exudates in the superotemporal macula and superior and nasal to optic nerve (A). Vascular abnormalities are present in the superotemporal peripheral retina (arrow). By 2 years, all exudates had resolved and the previously laser-treated retina is visualized in the superotemporal periphery (B).

Fig. 3. Optical Coherence Tomography image upon initial presentation demonstrated macular exudates encroaching superotemporally (A). However no foveal exudates or edema were visualized (B), suggesting the hyperopia was refractive in etiology.
4. Conclusions

This case demonstrates the importance of detecting and correcting for concurrent amblyopia in pediatric retina conditions that may, on fundus examination alone, appear to have a retinal cause for reduced visual acuity.

Author contribution

M. E. Hartnett, M.D. has had full access to all the data in the study and takes responsibility for the integrity of the data.

Funding

No financial or proprietary interest associated with this manuscript.

Acknowledgements

This work was supported by the National Institutes of Health R01 R01EY015130 and R01EY017011 to M.E.H. and an Unrestricted Grant from Research to Prevent Blindness, Inc., New York, NY, to the Department of Ophthalmology & Visual Sciences, University of Utah.

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