• Letter to the Editor •

Bilateral panuveitis with bacillary layer detachment in a 7-year-old girl

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Dear Editor,

Paediatric bilateral panuveitis is an uncommon but sight-threatening condition that requires prompt recognition and aggressive management. Bacillary layer detachment (BLD), increasingly[1] recognized on optical coherence tomography (OCT), reflects disruption within the photoreceptor layer. Although frequently reported in acute Vogt-Koyanagi-Harada (VKH) disease[2], BLD is not pathognomonic and may occur in other inflammatory or infectious disorders. We present a pediatric case of bilateral panuveitis with BLD, illustrating the diagnostic challenges and highlighting the importance of early systemic immunosuppressive therapy[3]. A 7-year-old girl presented with acute bilateral ocular pain, redness, photophobia, and decreased vision of 24h duration. Best-corrected visual acuity (BCVA), measured using a Snellen chart, was 0.3 in the right eye and 0.25 in the left eye. Slit-lamp examination revealed mixed conjunctival injection and abundant anterior chamber cells (Standardization of Uveitis Nomenclature grade 3+), with poor pupillary dilation. Funduscopy showed bilateral optic disc swelling (papilledema) and loss of macular contrast (Figure 1A–1B).

OCT demonstrated bilateral BLD (Figure 1C–1D), with detachment heights of 667 μm in the right eye and 543 μm in the left eye. Laboratory investigations revealed elevated inflammatory markers, human leukocyte antigen (HLA)-B27 positivity, and negative serologies for syphilis, toxoplasmosis, tuberculosis, and herpesviruses. Brain magnetic resonance imaging and systemic evaluations were unremarkable.

The study was conducted in accordance with the Declaration of Helsinki. Ethical approval was waived by the institutional review board due to the retrospective nature of this single-case report. Written informed consent was obtained from the patient's legal guardians for publication of this case report and accompanying clinical data.

The patient was treated with high-dose oral corticosteroids (deflazacort 60 mg/d), topical corticosteroids, and cycloplegics. Within one week, BCVA improved to 0.8 in the right eye and 0.5 in the left eye. At one month, BCVA reached 1.0 in both eyes, with OCT showing complete anatomical resolution of the BLD (Figure 1E–1F). To minimize long-term corticosteroid exposure, adalimumab was initiated two months after presentation as a steroid-sparing agent. During the first three months of follow-up, the patient remained relapse-free with complete disease control, after which she was referred to another centre for continued management[4-6].

This case fulfils the criteria for probable VKH (ocular isolated form) according to the revised international diagnostic consensus, as no history of ocular trauma or surgery was present and alternative causes of uveitis were excluded. Nevertheless, the absence of fluorescein or indocyanine green angiography during the acute stage limited diagnostic certainty. Although HLA-B27 positivity raised the possibility of an alternative immune-mediated process, posterior segment involvement is uncommon in HLA-B27-associated uveitis[2,7].

Although intravenous pulse corticosteroid therapy has been advocated in severe acute VKH and has been associated with rapid resolution of BLD, particularly in adult patients, the initial therapeutic approach in our pediatric case[8] consisted

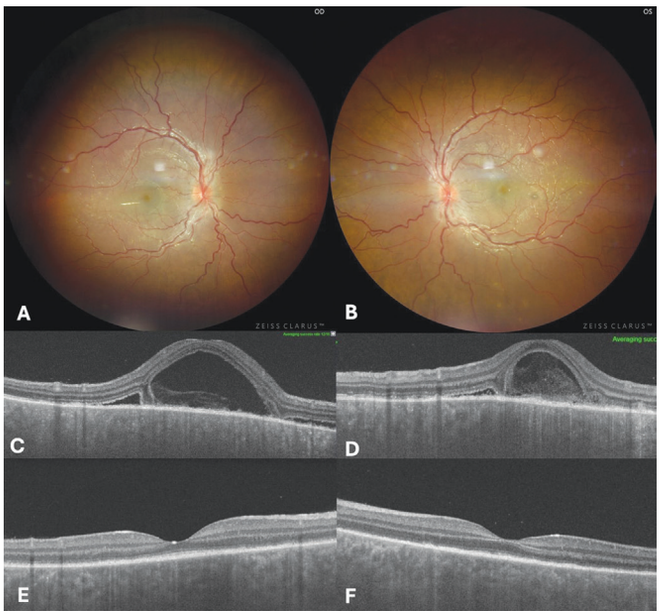

Figure 1 Bilateral panuveitis with bacillary layer detachment (BLD) imaging in a 7-year-old girl with probable Vogt-Koyanagi-Harada (VKH) disease A, B: Color fundus photographs of the right eye (A) and left eye (B) at presentation demonstrate bilateral optic disc swelling (papilledema) and loss of the normal foveal reflex, consistent with acute VKH. Subtle macular elevation is also noted; C, D: Spectral-domain optical coherence tomography (SD-OCT) images of the right eye (C) and left eye (D) reveal prominent BLD at the macula, characterized by a hyporeflective intraretinal cavity bounded superiorly by the external limiting membrane (ELM) and inferiorly by the disrupted ellipsoid zone (EZ). Hyperreflective material within the cavity suggests the presence of fibrin and photoreceptor debris; E, F: Follow-up SD-OCT images of the right eye (E) and left eye (F) demonstrate complete resolution of the BLD. The outer retinal layers have reattached, and the ellipsoid zone shows signs of ongoing recovery, appearing partially restored but still discontinuous, suggesting gradual structural regeneration of the photoreceptor outer segments.

of high-dose oral corticosteroids. This decision was made while a multidisciplinary pediatric assessment was ongoing to evaluate the indication and safety of intravenous pulse therapy. Importantly, systemic treatment was not delayed, and given the rapid clinical and anatomical improvement observed shortly after treatment initiation, oral corticosteroid therapy was maintained, achieving complete resolution of the BLD and full visual recovery. Previous reports have demonstrated favorable outcomes of BLD following intravenous pulse therapy; however, recent reviews emphasize that BLD represents a biomarker of acute outer retinal inflammation rather than a disease-specific entity, and that prompt systemic immunosuppression, regardless of the route of administration, is the key determinant of recovery[3,9].

BLD is an important OCT biomarker of acute inflammatory activity but lacks disease specificity. It has been described in VKH, toxoplasmosis, tuberculosis, and other inflammatory chorioretinal disorders. Its detection should therefore prompt a broad differential diagnosis and thorough systemic work-up. In our patient, the bilateral presentation, OCT features, and clinical course were most consistent with VKH, despite the absence of extraocular manifestations[3].

Paediatric cases of BLD associated with VKH-like panuveitis remain uncommon, particularly those with comprehensive multimodal imaging documentation and longitudinal OCT follow-up. In this patient, bilateral presentation, detailed structural[10-11] characterization of BLD, and complete anatomical and visual recovery following early systemic immunosuppression highlight the relevance of prompt diagnosis and treatment in preserving visual function.

In conclusion, BLD is a valuable OCT finding in pediatric panuveitis, signalling acute outer retinal involvement but lacking disease specificity. In this child, early multimodal evaluation, systemic work-up, and prompt immunosuppression resulted in complete anatomical and visual recovery. Recognition of BLD should alert clinicians to consider VKH and other inflammatory aetiologies, and to initiate systemic therapy without delay to preserve vision.

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