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Pediatric Panuveitis: Diagnostic Dilemma Between Endogenous Endophthalmitis and Systemic Disease

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Abstract | **Case Report**

This case report describes a severe unilateral pediatric panuveitis initially suspected to be endogenous endophthalmitis because of hypopyon, vitritis, and exudative retinal detachment. Further investigations revealed an underlying systemic inflammatory disease associated with glomerulonephritis rather than an infectious cause. The patient showed clinical improvement following systemic corticosteroid therapy. This case highlights the diagnostic challenge of differentiating severe inflammatory uveitis from infectious endophthalmitis and emphasizes the importance of thorough systemic evaluation in pediatric patients.

Keywords: Panuveitis, Hypopyon, Vitritis, Endophthalmitis, Glomerulonephritis, Inflammation, Corticotherapy, Childhood.

INTRODUCTION

Panuveitis is a severe ocular inflammation affecting the uvea and causing vision loss Endogenous endophthalmitis results from the hematogenous dissemination of a distant systemic infectious focus.

The distinction between infectious panophthalmitis and non-infectious panuveitis associated with systemic disease is a crucial diagnostic challenge, as it dictates treatment.

We present the case of a young female patient who developed unilateral panuveitis associated with systemic symptoms (fever and arthralgia) and orbital cellulitis, which strongly mimicked an infectious endogenous panophthalmitis

CASE PRESENTATION

This is a 5-year-old female patient with a family history of paternal tuberculosis.

She was admitted for a severe systemic syndrome (fever, altered general condition, and monoarthritis of the left knee) associated with acute unilateral ocular inflammation (synechial anterior uveitis with hypopyon, and visual acuity reduced to positive light perception).

An exhaustive etiological workup and probabilistic antibiotic therapy were immediately initiated in a hospital setting. Three days later, given the persistence of symptoms, the initial negative infectious workup, and the appearance of vitreous echoes and exudative retinal detachment on B-mode ultrasound, the diagnosis of Endogenous Endophthalmitis could not be ruled out, justifying the intensification of broad-spectrum intravenous antibiotic therapy.

Clinical reassessment subsequently revealed the onset of a non-infectious-like glomerulonephritis. In light of this new development, the lack of confirmation of an infectious etiology, the absence of response to prolonged antibiotics, and a negative immunological workup, an intravenous corticosteroid bolus was introduced under antibiotic coverage to control the potentially life-threatening systemic inflammation.

One month later, the evolution was marked by a spectacular improvement in the general condition and notable visual recovery (visual acuity reached 8/10, with the disappearance of subretinal detachment and the persistence of slight vitreous condensation). The patient remains under ongoing follow-up for surveillance and cold-search for an underlying inflammatory or autoimmune disease.

Figure 1-2: First clinical examination showing unilateral ocular inflammation (synechial anterior uveitis with hypopyon)

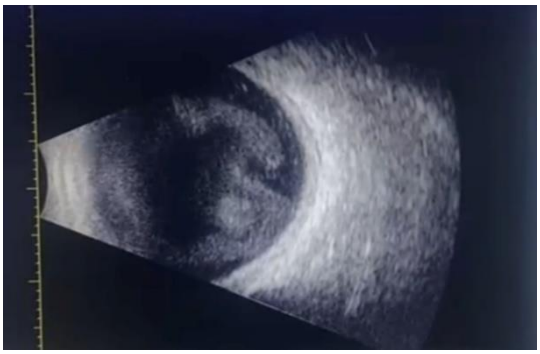

Figure 3: Vitreous echoes and exudative retinal detachment on B-mode ultrasound

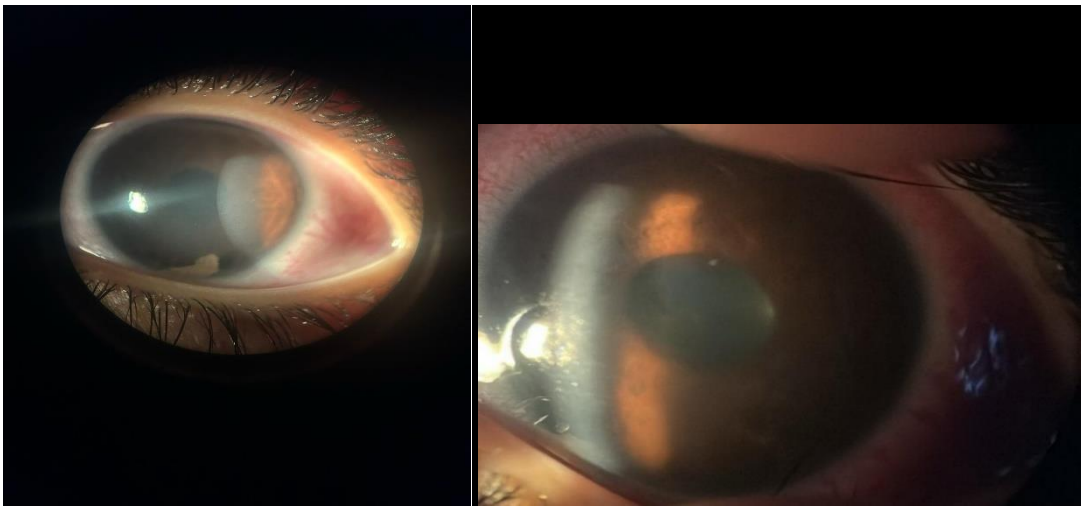

Figure 4-5: Ocular manifestation evolution after intravenous corticosteroid bolus

Figure 6: White eye after 1 month of treatment and follow-up

DISCUSSION

White eye after one month of treatment and follow-up This case perfectly illustrates the complexity of diagnosing serious eye conditions in children. The initial combination of acute panuveitis with hypopyon and a systemic syndrome (fever, septic-like monoarthralgia) mimicked endogenous endophthalmitis

(EE). However, the literature indicates that EE is rare and that, in children, severe uveitis may be a manifestation of a systemic disease.

The therapeutic challenge was to make the crucial distinction between an infectious etiology requiring high-dose antibiotics and an inflammatory etiology. The absence of a confirmed infectious focus (negative infectious workup) and the lack of response to prolonged antibiotic therapy, combined with the onset of non-infectious glomerulonephritis, ultimately steered the diagnosis toward systemic uveitis. The marked improvement in vision and the dramatic systemic improvement observed after initiation of corticosteroid therapy retrospectively confirm the inflammatory nature of the condition, although EE remains the primary hypothesis that must be urgently ruled out.

CONCLUSION

faced with severe pediatric panuveitis mimicking endogenous endophthalmitis, etiological diagnosis is an emergency. Our case illustrates the necessity of an exhaustive systemic workup and the early consideration of an inflammatory etiology, with the favorable outcome under corticosteroids confirming the systemic nature of the condition.

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