

Intricate treatment of Endophthalmitis

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Abstract

Uveitis implies an inflammation of the uveal tract. However, the term is commonly used to describe many forms of intraocular inflammation involving not only the uvea but also the retina and its vessels. We present the case of a 9 year-old girl, hospitalized in Emergency Eye Hospital of Bucharest, for uveitis with hypopyon. Special investigations (infectious, rheumatological, imaging, immunological) revealed endophthalmitis of unknown etiology. The patient received a complex treatment, comprising of systemically administered tienam and prednisone, and of local treatment and intravitreal with triamcinolone injection. Given the complications of the cataract in the course of the disease, vitrectomy and Extra-Capsular Extraction (EEC) with intraocular lens implantation followed. The functional outcome was very good, periodic monitoring is required to be prolonged.

Keywords: *endophthalmitis, intravitreal injection, cataract*

Introduction

Endophthalmitis implies inflammation, often purulent, involving all the intraocular tissues, except the sclera. Endophthalmitis includes anterior and posterior uveitis. Anterior uveitis is the most common form, accounting for $\frac{3}{4}$ of cases. Presentation is typically with sudden onset of unilateral pain, photophobia and redness. Visual acuity is usually good at presentation except in eyes with severe hypopyon [1].

Miosis due to sphincter spasm may predispose to the formation of posterior synechiae. Aqueous cells indicate disease activity and their number reflects disease severity.

Hypopyon is a feature of intense inflammation in which cells settle in the inferior part of the anterior chamber and form a horizontal level.

Posterior uveitis encompasses retinitis, choroiditis and retinal vasculitis. Active lesions are characterized by whitish retinal opacities with indistinct borders due to surrounding edema [2].

Case report

We report the case of a 9 year-old girl presenting with blurred vision, photophobia of the right eye for 5 days, without any history of ocular trauma. External examination revealed right eye with good perception of hand movements, right eye intraocular pressure of 12 mmHg, right eye normal ductions and versions movement.

Slit lamp examination indicated cellular deposits on the corneal endothelium, hypopyon, fibrinous exudate. Fundus examination was unexplorable.

The results of the laboratory investigations for inflammatory syndrome are presented in Table 1. The serological tests were negative for *Toxocara canis* and *Toxoplasma gondii* (Table 2).

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Table 1. Special investigations: inflammatory syndrome

Investigation	Patient value	Normal value
WBC	13,5	3,9-9,6/1000/uL
NEUTROPHILS	84,3	37,0-73,0/%
LYMPHOCYTES	11,8	20-55/%
FIBRINOGEN	457	180-350 mg/dL
VSH	60	5-15

Table 2. Special investigations: infectious syndrome

Investigation	Patient value	Normal value
Toxocara canis	3,901 NTU	<9 = Negative
Toxoplasma gondii	<0,13 UI/ml	<1 = Negative

Imagistic investigations: Ocular ultrasound shows right eye with multiple inflammatory vitreous echoes and choroidal edema (Figure 1). Computer tomography was performed to exclude sarcoidosis, multiple sclerosis and primary intraocular lymphoma (Figure 2).

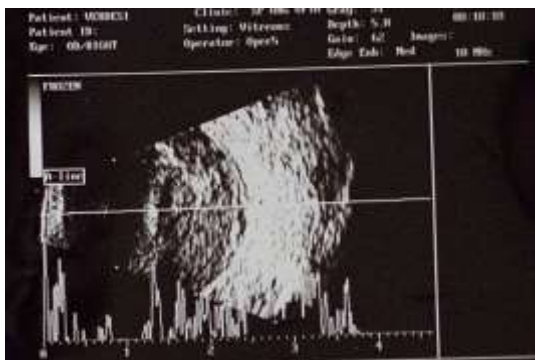


Fig. 1. Ocular ultrasound

The diagnosis is right eye endophthalmitis sustained by anterior uveitis: keratic precipitates, hypopyon, fibrinous exudate and posterior uveitis: vitreous haze, choroidal edema.

Differential diagnosis includes idiopathic endophthalmitis or systemic associations: parasitic (toxoplasmosis, toxocarasis), bacterial (tuberculosis, syphilis, Lyme disease, brucellosis, endogenous bacterial endophthalmitis, cat-scratch disease), viral (CMV retinitis, HIV microangiopathy), fungal (fungal

infection has not been found), neurological (multiple sclerosis, Vogt-Koyanagi-Harada syndrome, Behçet syndrome), rheumatic (spondyloarthropathies, juvenile arthritis), gastro-intestinal (Crohn disease, Whipple disease), sarcoidosis.

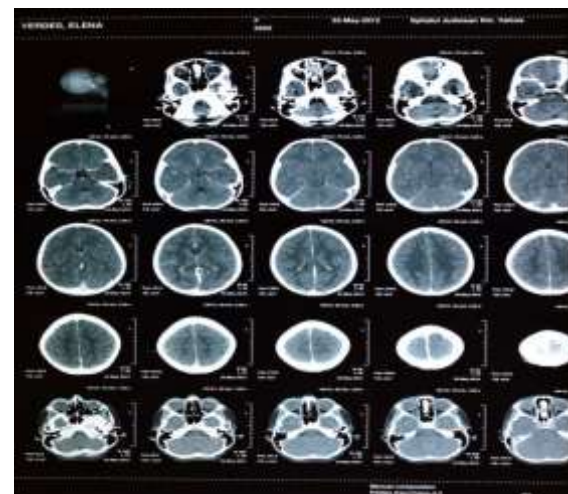


Fig. 2. Skull CT

The treatment was systemic with Tienam (imipenem and cilastatin) 500 mg i.v., every 12 hours, PDN 30 mg/day (after 7 days 25 mg), Diflucan (fluconazolom) 1 cp/day, Dicarbocalm (calcium carbonate, magnesium carbonate and trisilicate) 1 tbx3/day.

The local treatment included: Netildex (neomycin sulfate and dexamethasone),

Edicin (vancomycinum), Axetine (cefuroximum), Diflucan (fluconazolom), Tropicamid (tripicamide), Fenefrin (phenylephrinum) (1 dx6/day) and intravitreal triamcinolone (TA) injection (Figure 3).



Fig. 3. Intravitreal injection

After treatment, the visual acuity of the patient improved from 0.04 to 0.1 and 0.2 m, but after one month, the visual acuity decreased to counter finger at 0.2 m because of the cataract complications that occurred (Figure 4).



Fig. 4. Posterior subcapsular cataract

Vitrectomy and EEC with intraocular lens implantation followed. The functional outcome was very good. Discharge vision was 1/6, 1/4 pinhole. After a month vision was 0.8 - 0.9 with glasses (+0.5 sfd -0.75cyld /180 degrees). Titmus test: fly, ABC+, Lang test+, Worth test+.

The functional prognosis is excellent with a final visual acuity of 0.2 m. The general prognosis is favorable considering the side-effects of systemic medication (prednisone), which also requires a prolonged monitoring of the patient (Figure 5).



Fig. 5. Cushingoid syndrome, post-prednisone therapy

Treatment in uveitis comprises of predominantly the use of anti-inflammatory and antibiotic therapy [3]. It is important to keep in mind that drugs used for treating uveitis have potential side-effects and this should always be weighed against the decision to treat. Also, it must be emphasized that the use of systemic therapy should be carried out in conjunction with a physician who is competent to deal with the associated complications both to the underlying disease and to the therapy [4, 5].

Conclusions

In conclusion, this clinical case is particular because it is an idiopathic endophthalmitis. It required exhaustive interclinical examinations. Treatment was complex and included medical (tienam, the most "powerful" antibiotic; prednisone, the "strongest" anti-inflammatory) and invasive treatment: the intravitreal injection of TA and the vitrectomy. Another feature of the case is the secondary cataract, solved by lens phacoemulsification and IOL-CP implantation. The case requires extensive monitoring, being an idiopathic disease, relapses may occur. Periodical pediatric examinations are necessary, due to the side effects of medication [6].

References

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