

## Bilateral Uveopapillitis Revealing a Herpes - Hepatitis B - Cytomegalovirus Viral Coinfection in an Immunocompetent Patient: Case Report from the Thiès Regional Hospital Center

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### Abstract

### Case Report

Co-infection in immunocompetent patients is not a common occurrence in everyday practice, especially in the case of uveitis. The type G immunoglobulins found in the chronic carriage of the three germs raised serious questions about their virulent potential in the chronic phase. The corticosteroid therapy administered considerably reduced the inflammatory cascade that had already begun.

**Keywords:** Uveopapillitis, coinfection.

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## INTRODUCTION

Uveitis is an inflammatory reaction of the uveal tract (the vascular tunica of the eyeball) [1]. Epidemiological data on this condition have been and remain imprecise worldwide due to the existence of various variations [2]. Uveitis occurs frequently in young adults (20-40 years), with no gender predominance [2]. With a variety of aetiologies ranging from autoimmune to infectious diseases, uveitis is a crossroads for several medical specialities [3].

It is also important to emphasise the clinical polymorphism, which is influenced by the existence of an underlying pathology (terrain). Regardless of the topography of uveitis, the frequency of potential complications with a possible risk of blindness are aspects to be taken into account in the diagnostic and therapeutic approach [3].

Significant advances in microbiology, molecular biology and imaging have provided significant support in significantly reducing the consequences of these conditions for patients, while preserving their quality of life [3].

We report a case of bilateral uveitis in an immunocompetent patient with three viruses.

## OBSERVATION

The patient was 25 years old, married, living in the town of Mbour and unemployed. She was seen in January 2024 for redness, ocular pain and a progressive decrease in visual acuity that had been present for about 1? months prior to the consultation. This symptomatology had not been the subject of any consultation due to a lack of financial resources.

She had no particular medical or surgical history; the clinical examination revealed:

- A drop in visual acuity, with acuity measured at 2 m finger count (right eye) and 1 m finger count (left eye) respectively
- Mild conjunctival hyperaemia
- A Tyndall
- Ocular tone of 12/10 mm Hg
- Grade I hyalitis in both eyes
- Stage 2 papilledema in both eyes

The positive diagnosis of bilateral uveopapillitis to be labelled was retained.

Pending the results of the aetiological investigation, the patient was treated as an out patient with:

- Corticosteroid bolus for 3 days (200 mg hydrocortisone + 250 ml saline) administered over 3 hours
- Oral relai with 60 mg methyl prednisolone for 10 days; a 20 mg reduction every 10 days was observed.
- Nucleo- CMP 2 capsules/d in two doses for 1 month
- The combination of dexamethasone + neomycin sulphate + polymyxin B sulphate eye drops (1 drop x 4/d) for 15 days (tapering to 1 drop every 15 days).

Progression under treatment at D23 was marked by a considerable regression of the inflammatory syndrome, an improvement in visual acuity (8/10 in the right eye and 6/10 in the left eye) and a normal fundus.

An etiological investigation was carried out in collaboration with the Internal Medicine Department:

- Positive hepatitis B serology; identification of viral DNA on blood sample; viral load measured at 421 IU/ml or 2,62 log (reference value = 1 - 9 log)
- Positive herpes serology (antibodies to herpes simplex virus 1: Ig G +++ > 58)
- Positive cytomegalic serology (antibodies to cytomegalovirus: Ig G +++ with avidity index of 0,89)
- Negative HIV serology
- Toxoplasma serology negative
- Syphilitic serology negative
- Pathergic test negative
- HLA B27 antigen test negative
- Serum protein electrophoresis normal

## DISCUSSION

Anterior, intermediate, posterior or total uveitis in young adults is frequently encountered in everyday practice. Epidemiology varies according to life stage. The majority of cases occur in young adults aged between 20 and 40 [2], as in the case of our 25-year-old patient.

In contrast to the classic clinical picture of panuveitis originating in the anterior segment, our patient presented with less noisy symptoms. This could be explained by the delay in consultation and the possibility of medication not reported by the patient.

The most laborious exercise remains etiological research with a view to initiating a specific treatment because it may prove unsuccessful [1, 2, 4]. In our case, the search proved difficult for financial reasons, as mentioned above. Appropriate management based on aetiological treatment is one of the keys to a favourable

therapeutic response and therefore a reduction in the risk of recurrence.

Serologies for herpes simplex virus (HSV1), cytomegalovirus (CMV) and hepatitis B virus were all positive. The particularity of the first two serologies was the chronic nature of the infections, with the exclusive identification of immunoglobulin G. In patients with viral hepatitis B, uveitis (anterior ++++) is the main extrahepatic manifestation [5]. Cacoub *et al.*, [6] found a low frequency of 3% in their study population. In addition, the identification of viral DNA (hepatitis B) and the viral load measurement mentioned above would have made it possible to retain the hepatitis B virus as the causal agent. However, a viral load of less than 10 log suggests chronic carriage and inactivity of the germ at the time of sampling.

According to the literature [7], HSV uveitis is very noisy, unilateral, tends to involve the anterior segment and is accompanied by ocular hypertension.

CMV is a rare cause of uveitis in immunocompetent patients, as reported by Monchy *et al.*, [8]. Uveitis with or without retinitis is one of the main clinical manifestations of this germ [9]. It is less inflammatory than HSV, and posterior segment involvement cannot be ruled out [10, 11]. However, diagnostic certainty is currently based on polymerase reaction chain (PCR) identification of viral DNA in the aqueous humour, with calculation of the WITNER coefficient [12], and confocal microscopy of retrodescentic precipitates (classic "grape cluster" appearance). We are aware of the complexity of these practices, which are important but costly and not feasible in our context (unsuitable technical facilities, limited financial resources), and the high avidity index of immunoglobulin G (IgG) indicates a primary infection that is more than three months old. In addition, this uveitis is known to be cortico-resistant. Our etiological discussion on the possible involvement of CMV in this uveopapillitis focused more on anamnestic, clinical and therapeutic elements. Despite their chronic nature, it is possible that an X factor (stress or hormonal change) could lead to reactivation of the germs. Bodaghi *et al.*, [2] report a possible hormonal influence in female patients, as it has been clearly established that during the luteal phase, there is a drop in progesterone and oestrogen (which have anti-inflammatory properties). In this respect, our clinical observation corroborates the suggestion made by certain authors of a drop in immunity following stress and/or hormonal change, which inevitably justifies the reactivation of HSV1, CMV and HBV in our patient. At this stage of the discussion, there is every reason to believe that we are dealing with a clinical picture in which these three viruses are intertwined.

The therapeutic response to treatment after two and a half months was satisfactory, with a spectacular

improvement in visual acuity from counting fingers to 8/10 and 6/10 just after three weeks of topical and general corticosteroid therapy (bolus + oral relay), not forgetting Nucléo CMP. However, tenofovir 300 mg/d for 4 months and azythromycin 500 mg/d were prescribed, with quarterly clinical and biological monitoring in ophthalmology and internal medicine.

## CONCLUSION

For a long time, uveitis in young adults was considered to be idiopathic, due to the complexity of the aetiological search. The resources deployed vary according to the practitioner, the hospital's technical facilities and the patient's financial resources. Given the recurrent nature of certain clinical forms, in this case herpetic uveitis, the functional prognosis remains guarded if no aetiology is found. Good co-ordination of care between ophthalmologists and internists is one of the keys to therapeutic success, and the effectiveness of parenteral corticosteroid therapy in bolus doses is now well established.

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