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Hypopyon in Acute Lymphoblastic Leukemia: A Case Report

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Abstract:- Ocular involvement during acute leukemia is the third most common extra-medullary localization after meningeal and testicular localizations. It is considered a poor prognostic factor because of the increased risk of relapse in the bone marrow and/or meninges. In this presentation, two cases of children followed for acute lymphoblastic leukemia, who presented during maintenance treatment with bilateral hypopyon. The treatment consisted of systemic and intrarachid chemotherapy, associated with local corticosteroids, to be followed rapidly by ocular radiotherapy.

I. INTRODUCTION

Tumor-induced hypopyon may be inaugural in childhood leukemia, as well as indicative of a relapse. A hypopyon of infectious origin constitutes the main differential diagnosis given the context of immunodepression. However, it is usually unilateral. We present two cases of children treated for ALL who presented bilateral hypopyon during maintenance therapy

II. PATIENTS AND OBSERVATIONS

Case 1

The first case was a 13-year-old boy with group B (intermediate risk) ALL who presented after 6 months of complete remission with a bilateral visual acuity decline that rapidly progressed to blindness after one month. Ophthalmological examination found a bilateral hypopyon, associated with a bilateral choroidal mass with retinal detachment. A CT scan of the orbit showed bilateral irregular hyperdense sclerochoroidal thickening.

Case 2

The second case is a 4-year-old boy, followed in oncology since the age of 3 years for acute lymphoblastic leukemia (ALL). At the 28th month of treatment, he presented ten days before his hospitalization with bilateral ocular redness with photophobia and lacrimation. On admission, uncorrected distance visual acuity was 7/10 and unimprovable in both eyes. Anterior segment examination showed superficial punctate keratitis, hypopyon and iridal nodules in both eyes (Figures 1 and 2). Fundus examination was normal.

III. DISCUSSION

The hypopyon of tumor origin is part of the pseudo uveitis or masquerade syndrome, which can be present in the case of retinoblastoma in children, ocular involvement of leukemia patients or metastatic involvement of adenocarcinoma (1). Ocular involvement in acute leukemia is the third most common extra-medullary location after meningeal and testicular involvement (2).

Isolated involvement of the anterior segment of the eye is rare and represents 0.5 to 2.6% of relapses of the hemopathy. (3)

This isolated involvement of the anterior segment of the eye would be explained by the theory of pharmacological sanctuary represented by the anterior segment of the eye escaping the action of systemic chemotherapy. (3) (4) (5). The diagnosis is confirmed by puncture of the anterior chamber of the eye for cytological analysis. (2). The hypopyon includes lymphoblastic cells, necrotic tissue, and protein exudate (3).

The main differential diagnosis is with hypopyon of infectious origin because of the immunosuppressive context. However, it is usually unilateral. Treatment includes systemic and intrarachinal chemotherapy, combined with local corticosteroids, which should be followed rapidly by irradiation of the anterior segment of the eye (2). The required radiation dose is 12 to 30 Gy (4). Ocular involvement during the course of acute lymphoblastic leukemia is a poor prognostic factor because of the increased risk of marrow and/or meningeal relapse (3, 6).

IV. CONCLUSION

For the ophthalmologist, the diagnosis of ocular localization of acute leukemia must always be evoked in front of a hypopyon, an iris heterochromia, a spontaneous hyphema or an ocular hypertonia. Close collaboration with hematologists is necessary in order to initiate appropriate therapy.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

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ICONOGRAPHIE

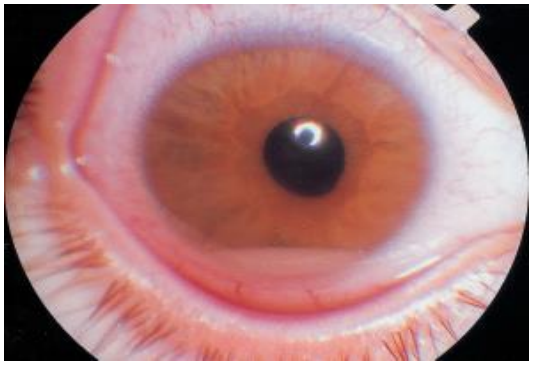

FIG.1 Hypopion of the right eye, with relatively quiet eye.

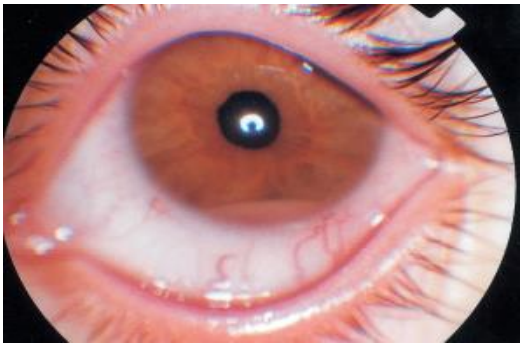

FIG.2 Hypopion of the left eye