Flaming Retinal Hemorrhage Revealing Acute Lymphoblastic Leukemia (About a Case)

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Abstract: The frequency of retinal damage in acute leukemias can range from 28 to 50%. These retinal lesions may be indicative of leukemia. A 51-year-old patient consults for a sharp decrease in bilateral visual acuity and in whom fundus examination shows the presence of multiple retinal hemorrhages disseminated at the posterior pole in both eyes and that some of them are white-centered the rest of the somatic examination is without abnormality. The etiological diagnosis makes it possible to link them to a table of acute lymphoblastic leukemia so that the patient was treated in collaboration with the oncologist. In the medical literature, several cases of retinal hemorrhages are reported as manifestations of acute leukaemias. They are exceptional as the mode of entry of the disease. Finally, from this observation, we show the interest of ophthalmological examination in the case of leukemia both for diagnosis and treatment.

Keywords: Retinal hemorrhage, Flammer, leukemia.

1. Introduction

Acute leukaemias are related to massive invasion of the bone marrow by hematopoietic cells of immature character: blast cells, we distinguish acute leukaemias of the myeloid lineage of acute lymphoblastic leukaemias [1].

Oculo-orbital invasion by leukemic cells may occur at different stages of disease progression [2].

Retinal lesions in acute leukemias can result from different mechanisms, their frequency varies from 28 to 50% and they can be indicative of the leukemia picture. Leukemia is an emergency requiring the investigation and treatment of complications [1].

We report an observation of isolated retinal ocular involvement indicative of leukemic involvement.

2. Patient and Observation

We report the case of a 51-year-old patient who consulted for a sharp decrease in bilateral visual acuity of 2/10 in the right eye and 3/10 on the left and for whom the anterior segment was without any particularity, in contrast to the fundus where the presence of multiple retinal hemorrhages disseminated at the posterior pole in both eyes was objectified, and some of them had a white center with edema. Bilateral macular and the rest of the somatic examination is without abnormality. Etiological research helped to restore the diagnosis of acute lymphoblastic leukemia and the patient was treated in collaboration with the oncologist.

3. Discussion

The prevalence of ocular involvement in acute leukemia is highly variable in the literature. This prevalence is clearly decreasing thanks to chemotherapy and systematic preventive treatment of central nervous system locations [2]. Ocular locations occur from the central nervous system, itself reached by blood or contiguity from the neighboring bone; However, in 6% of cases, ocular involvement is apparently isolated and evokes colonization of the eye by hematogenous means; This specific lesion of the eyeball by leukemic infiltration can be distinguished from other secondary lesions [3].

Retinal involvement is a common manifestation of acute leukaemias [4]. Miliary infiltrates of the retina are manifested by pre-retinal white nodules [5], sometimes associated with local necrotic and / or haemorrhagic remodeling [Figure1]. Its frequency varies between 13 and 30%, This variable figure is explained according to whether it is clinical findings or autopsy and there is a correlation between the existence of retinal infiltrates and the increase in the rate of white blood cells (reflection of circulating blastosis) [6-8]; Leukemic infiltrates are a sign of poor prognosis such as the degree of leukocytosis [9].

Lesions related to retinal vasculopathy are secondary to anemia and thrombocytopenia, they occur in 9% of acute lymphoblastic leukemias (AML) and in 3% of all acute leukemias [10, 11], they are responsible for retinal hemorrhages, especially at the posterior pole of the eye, most often intraretinal (appearance in flaming [Figure1]) and sometimes contain a white center (hemorrhages with white center) due to cell debris, capillary emboli or true leukemic infiltrates [Figure2] [Figure3].

Other isolated or associated lesions are part of leukemic retinopathy: irregular dilatations of the retinal veins, cottony nodules, or localized foci of ischemic degeneration of the retinal fibers.

The involvement of the pigment epithelium can lead to a serous detachment of the neuroepithelium, which often sits at the posterior pole with numerous leakage points [12].

Choroidal leukemic localizations are more frequent, found in 43 to 93% of autopsies of patients with acute leukaemias, but they are clinically not very expressive [8,13,14].

Classically, they manifest as serous retinal detachment in case of massive invasion or retinal pigmentary disorders and leopard skin aspects [15].

The decrease in visual acuity is explained by retinal serous detachment and macular edema [Figure 4] [Figure 5].

It is a therapeutic emergency that requires urgent chemotherapy [15], oculo-orbital involvement is a factor of poor prognosis for most by authors.

4. Conclusion

Ocular invasion by leukemic cells may occur at different stages of the disease course, several tables are possible among which retinal hemorrhages in flames and which remain a rare manifestation of acute leukemias and which are consecutive to anemia and to thrombocytopenia.Conflits d'intérêts Les auteurs ne déclarent aucun conflit d'intérêts

Contributions of the authors

All authors contributed to the development or discussion of this article

Tables and figures

Figure 1: Retinography showing retinal hemorrhages in flames in the posterior pole.

Figure 2: Fluorescein angiography showing vascular abnormalities

Figure 3: Fluorescein angiography showing microaneurysms and vascular dilatation

Figure 4: Optical coherence tomography showing macular edema

Figure 5: Optical coherence tomography serous retinal detachment

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Figure 1

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Figure 3

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Figure 4

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Figure 5