Bilateral orbital masses in a patient with B-cell chronic lymphocytic leukemia: a case report

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Dear Sir,

B-cell chronic lymphocytic leukemia (B-CLL) is a neoplastic disease characterized by the proliferation of small mature-appearing $CD5^+$, $CD23^+$ B-cells, which accumulate within the bone marrow, blood and lymphoid tissues. [1,2] Extra-nodal involvement may be detected in several organs but very few reports exist describing the involvement of the orbit by B-CLL lymphocytes. [3,4,5] We present the case of a 69-year-old man with B-CLL, who developed orbital and periorbital infiltration by leukemia cells at the same time that disease progressed and who has been successfully treated with fludarabine.

In 1995, a 69-year-old-man was referred to our hospital for evaluation of a lymphocytosis detected on routine blood analysis. The diagnosis of B-CLL, stage A of Binet system, was made. Between 1995 and 1999, and because the lymphocyte count doubled in less than 6 months, he was treated three times with pulses of chlorambucil (0,15 mg/Kg/day, per os, 5 days) and prednisolone (1 mg/Kg/day, per os, 5 days), in a total of 24 courses, and in all the three occasions a partial hematological response was obtained. By January 2000, the patient presented with splenomegaly and bilateral orbital masses. At that time, the physical examination revealed smooth, non-tender masses near the superior orbital rims, bilateral ptosis, diplopia and limited ocular movements in all directions, especially on the left eye. Computed tomography showed enlargement of all extra-ocular muscles, upper and lower eyelids soft tissue and lacrimal glands, preferentially on the left side, without bony erosion (Figure 1). The orbital biopsy revealed a dense infiltrate of small lymphocytes and flow cytometric studies showed that 85% of them were $CD19^+$, $CD20^{+low}$, $CD22^{+low}$, $CD5^+$, $CD23^+$ and $IgM/kappa^{+low}$ B-cells, a phenotype that was consistent with B-CLL and identical to that observed in blood lymphocytes. By that time the lymphocyte count was of $104.3x10^9$/L, without anemia or thrombocytopenia. Serum lactic dehydrogenase and beta-2 microglobulin levels were increased. The patient was again treated with 8 courses of chlorambucil and prednisone, with diminution of the tumor masses and the lymphocyte count ($4.9x10^9$/L). Disease progression occurred three months after therapy withdraw, with clinical and laboratory findings similar to those before the initial treatment. Afterwards, he underwent treatment with fludarabine (40 mg/Kg/day, *per os*, 5 days, three courses). After fludarabine treatment, there were no detectable orbital masses, the spleen was not enlarged and the lymphocyte count decreased towards $8.8x10^9$/L. The patient conditions remained unchanged at last follow-up (3 months after finishing fludarabine treatment), without evidence of disease progression, either within the orbit or systemically. The patient described here had periocular manifestations in the setting of a worsening disease, and the identical tumor markers in orbital and blood specimens confirmed orbital infiltration by the same B-CLL clone that circulated in blood. There are several reports of involvement of the orbit and adnexal structures and tissues throughout the eye by leukemia and lymphoma cells, but these structures are more involved in acute leukemia than in chronic lymphoproliferative disorders. Orbital infiltration often presents as slowly enlarging lesions arising from the eyelid, orbit, lacrimal gland or conjunctiva and usually doesn't compromise vision. In literature, the extra-nodal involvement occurs in about 40% of patients with non-Hodgkin`s lymphoma, and the orbit accounts for 5-14% of all cases.[6] Based on clinical grounds, ocular and periocular involvement by B-CLL is exceedingly rare, with only a few cases being described in the literature to date; [3,4,5] it may occur as the initial manifestation or develop during the disease course and the possibility of local orbital recurrence should be considered.[3,5] Conversely to the low frequency find in the clinic, the results in autopsy studies for orbital involvement reach 75%3. One of the explanations is the slow growing rate of this kind of tumor, generally don't giving symptoms unless it reaches a large size [1,2,6]. Besides, as there is no lymphatic connection between the orbits, bilateral orbital involvement would suggest a degree of site-specific homing.[5,8] In contrast to the majority of previous reports of B-CLL involving the orbit our patient had a diffuse infiltration of different structures of both eyes, suggesting that B-CLL should be included in the differential diagnosis of bilateral extra-ocular muscle enlargment.[3] The clinical benefice obtained with fludarabine therapy alone should be emphasized, because orbital irradiation might result in severe ophthalmologic complications.[4]

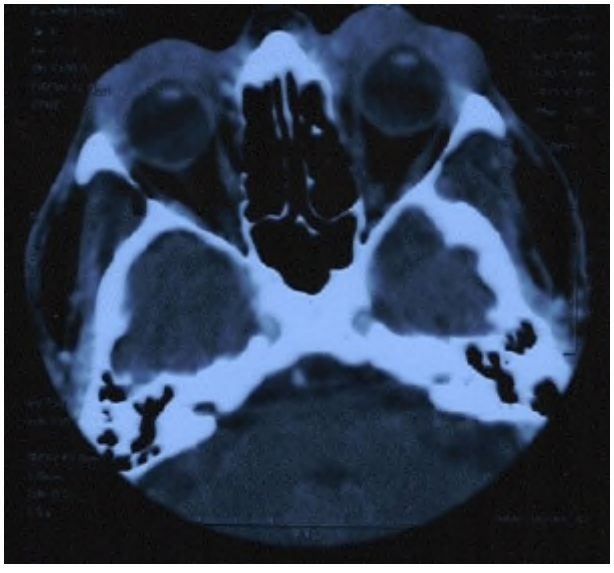

Figure 1.

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