A Case of Early Ocular Manifestation of Maculopathy in a 37 year Old Male Patient of CLL

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Abstract B cell chronic lymphocytic leukemia (CLL) also called chronic lymphocytic leukemia is a disease of elderly, but in rare cases it can occur in young adults. Majority of patients present with no specific symptoms, and CLL is suspected on the basis of high total and relative lymphocyte counts, discovered on routine blood examination. This patient was referred from medicine outpatient in our institute, Era's Lucknow Medical College & Hospital for routine complete blood count. His total leukocyte count came out to be alarmingly high. The general blood picture and bone marrow examinations were consistent with CLL. On immunophenotyping CD5 and CD23 were positive. His cervical lymph nodes biopsy was reported as a case of CLL/small lymphocytic lymphoma. On his complaint of hazy vision his funduscopy revealed maculopathy. This makes our case a unique and rare one, as maculopathy in a young patient of CLL has not yet been reported from India.

Keywords Chronic lymphocytic leukemia (CLL) · Small lymphocytic lymphoma (SLL) · Maculopathy · Young adults

Introduction

Chronic lymphocytic leukemia (CLL) is a disease in which mature appearing lymphocytes become cancerous and non

functional. They gradually replace normal cells in lymph nodes. More than three-fourths of the people who have CLL are older than 60 years of age. The disease does not occur in children and is rare in young adults. In early stages of CLL, most of the patients have no symptoms and the disease is accidentally discovered on routine blood examination which reveals very high TLC and absolute lymphocyte counts. Late symptoms may include, fatigue, loss of appetite, weight loss, shortness of breath on exertion and enlarged lymph nodes. Hepatosplenomegaly is also a common feature. Here we report a rare case of early ocular manifestation of maculopathy in a 37 years old male patient of CLL. Acute leukemia is known to affect the eye in a wide variety of ways and detailed post mortem examination reveals subclinical involvement, however, the ocular involvement in a case of CLL is a very rare finding. Our case is the first case of clinically significant macular involvement in a young male patient of CLL.

Case Report

A 37 years old male in medicine outpatient of ELMC&H presented with complaints of easy fatigability for 1½ years, breathlessness and swelling in inguinal region for 1 year and also blurring of vision for few days only. There was no history of fever, night sweats, petechiae or bleeding, malena or history of having blood transfusion. He had no significant past history. On general examination; skin and mucous membranes were pale in color. There was generalized lymphadenopathy consisting of submandibular, posterior cervical, supraclavicular, axillary lymph nodes on the left side while bilateral inguinal lymph nodes enlargement was noticed. On palpation the lymph nodes were discrete, non tender, firm, mobile and with no signs of inflammation. On

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respiratory examination few occasional crepts in right infrascapular region were appreciated. Per abdomen examination revealed hepatomegaly of 3 cm with soft smooth margins. The spleen was 6 cm below the costal margin and was non tender and smooth.

The haematological examination revealed; Hb—3.6 gm/dl, Hct—33.9 %, RBC— $3.17 \times 10^6/\mu\text{l}$, MCV—74 fl, MCH—23 pg, MCHC—30 g/dl, TLC— $1.8 \times 10^5/\mu\text{l}$, DLC-N-1, L-99, Platelet count— $49 \times 10^3/\mu\text{l}$. Coagulation profile was bleeding time—5 min, prothrombin time (PT)—14 s and International Normalized ratio (INR)-1 .

Peripheral blood smear showed normocytic RBCs with moderate anisopoikycytosis. WBC series showed leukemic leucocytosis with predominantly small mature lymphocytes. Prolymphocytes were less than 5 %. Large number of smudge cells were present (Fig. 1). No other immature cell of myeloid lineage were seen. Platelets appear reduced on smear. No hemoparasites were seen.

ALT was mildly raised (66 IU/L) on liver function tests but renal function test was insignificant.

Urine examination was insignificant.

USG showed mild hepatosplenomegaly with retroperitoneal lymphadenopathy.

CT chest and abdomen revealed mild bilateral pleural effusion with prominent bronchovascular markings and few precarinal lymphnodes. Mild hepatosplenomegaly with retroperitoneal lymphadenopathy was also reported.

On day two, he was advised bone marrow examination. Bone marrow aspiration showed particulate, hypercellular marrow. Erythrocytic lineage was suppressed but showed normoblastic reaction. Marked lymphoid hyperplasia consisting of small and medium sized lymphocytes was appreciated. (Fig. 2). The myeloid lineage was suppressed

but presented normal sequence of maturation. Few inactive megakaryocytes were seen.

Supportive treatment was initiated, meanwhile cervical lymph nodes were sent for histopathological examination. On gross examination there were three globular soft tissue pieces. All together measuring = $3 \times 1 \times 0.5 \text{ cm}^3$. Outer surface was smooth, encapsulated, and grey white in colour. Cut surface showed grey white solid areas. The microscopic examination of lymph node sections revealed that capsule had completely effaced architecture by diffuse infiltration of monomorphic small round lymphocytes (Fig. 3). These lymphocytes had round to slightly irregular nuclei, condensed chromatin, indistinct nucleoli with scant cytoplasm. The diagnosis of Small Lymphocytic Lymphoma/CLL was given.

On fundoscopy flame shaped hemorrhage near fovea was discovered in the right eye, (Fig. 4). One Roth spot was also noticed in superior quadrant. Blot hemorrhage was seen in temporal to fovea. Left eye showed two Roth spots at superio-temporal quadrant.

We also performed immunophenotyping which showed positivity for CD5 (Fig. 5), CD23 and negativity for CD10 and FMC7 and low clonality of Kappa (Fig. 6). The Royal Marsden score was >4 suggesting a very strong possibility of CLL.

On the basis of clinical, blood, bone marrow, lymph node biopsy findings and ophthalmoscopic examination the case was diagnosed as chronic lymphocytic leukemia with anemic maculopathy.

Discussion

CLL is a disease of elderly (median age 55 years) with slightly higher incidence in males (1.7:1). The occurrence

Fig. 1 Peripheral blood smear (leishman stain, 100×) showing smudge cells & lymphocytosis

Fig. 2 Bone marrow aspiration (leishman stain, 100×) showing lymphoid hyperplasia consisting of small & medium sized lymphocytes

Fig. 3 Cervical lymph node histopathology (H & E stain, 100×) showing monomorphic small round lymphocytes

Fig. 4 Fundus examination (*right eye*) showing flame shaped hemorrhage & Roths spot

of CLL, B-cell type, is thought to be distinctly uncommon in patients younger than 40 years of age [1]. CLL was largely considered to be a disease of slow progression [2]. In this case the patient was just 37 years old when he presented with CLL in advanced stage. In the West, CLL is the most common form of chronic leukemia (25–30 %) while in Asia it is uncommon (2–3 %). The uvea, not

retina, is the typical ocular tissue involvement in the majority of metastatic B-cell lymphomas. Retinal complications associated with hyperviscosity in chronic lymphocytic leukaemia is described by Davies et al. [3]. Intraocular lymphoma in a case of T-CLL [4] has been reported earlier where the presentation and course of the disease varied from our case of B-CLL [5]. In this case the

Fig. 5 Cervical lymph node histopathology (IHC, 100×) showing CD 5 positivity

patient presented with retinal and macular bleed along with anemic maculopathy which makes it a rare and unique case of young adult having CLL with ophthalmic manifestation. Anaemic maculopathy or any pathological condition of the macula, an area at the centre of the retina, disturbs the sensitivity and accuracy of vision [6]. The initial symptoms of maculopathy, are hazy vision and distortion of images. As maculopathy progresses the loss of central vision becomes total.

Ocular manifestation of anaemic maculopathy and presentation of CLL at a young age of 37 years makes our patient a rare and interesting case.

The only limitation of this study is that we did not apply FISH to detect translocation (11:14) to rule out Mantle Cell Lymphoma in Leukemic phase.

Fig. 6 Profile of flow cytometry

Fig. 6 continued

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