Case Report

Ophthalmic and pleural fluid involvement in A.L.L. cytology findings

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Abstract

Acute lymphoblastic leukemia is the most common variety of leukemia in childhood accounting for 70% cases of childhood leukemia.Orbital and pleural involvement in acute lymphoblastic leukemia is rare presentation. We report a case of acute lymphoblastic leukemia in a 35 year male relapsed as ocular swelling and pleural fluid involvement., who presented with gradually increasing blurring of vision which was associated with redness of the eye. Fine needle aspiration cytology (FNAC) was performed and a diagnosis of Leukemic Infiltration was offered.

Keywords: A. L. L., F.N.A.C. Ocular

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INTRODUCTION

Leukaemia is a systemic disease and involves all organs and tissues of the body. Common clinical presentations include fever, pallor and lethargy.[1] Orbital involvement is rare in acute lymphoblastic leukemia while myeloid leukemia have been associated with ocular involvement.[2,3,4,5]. Rarely, ALL cases may present with pleural fluid involvement.[6] Leukemia can present as pathology in the ocular adnexae. Recognition of the varied ocular presentations is also important in assessing the course and prognosis of leukaemia.[7] However, recent reports have demonstrated that the presence of ocular involvement is associated with poor prognosis in acute childhood leukaemias.[8] Therefore, it is important to consider an ophthalmic evaluation at the time of diagnosis of acute leukaemia in adults and children. We report a k/c/o ALL in 35 year male patient who presented with gradually increasing blurring and diminution of vision which was associated with redness of the eye. The patient was also presented with the features of pleural fluid involvement.

CASE REPORT

A 35 year-old male patient was a diagnosed case of Acute Lymphoblastic Leukemia since 08 months and had completed chemotherapy and achieved remission. Diagnosis of T cell A.L.L. was confirmed by Flow Cytometry which showed CD34, CD5, CD7 Positive, Tdt and CD13 Heterogeneous positive and CD 10, CD19, CD20 Negative. Patient presented with a gradually increasing blurring and diminution of vision which was associated with redness of the right eye. On examination, the small swelling approximately of size 1x1 cm was noted in the Lacrimal fossa of right eye. The swelling was firm in consistency and located Supero temporally in the lacrimal fossa. On further assessment, patient was found to be dyspneic and pleural effusion was noted. The patient was referred for fine needle aspiration cytology (FNAC) of lacrimal fossa swelling, which was done under Local anaesthetic eye drops in Minor O.T. in presence of Ophthalmologist. The procedure was smooth without any complication. FNA yielded whitish blood tinged aspirate. Wet fixed and Conventional Pap stained smears showed richly cellular smears comprising of scattered, singly placed, monomorphic medium sized round lymphoid cells with a high nuclear cytoplasm ratio, indistinct cytoplasm and RBCs in background. Similarly, pleural fluid cytology same results as that of FNAC of

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lacrimal fossa swelling. We reported it as Leukemic infiltration in K/C/O A.L.L. [Fig. 1, 2 and 3] Figure 1 [4x], 2 [10x] and 3 [40x] shows Pap stained cytological picture of ocular swelling showing monomorphic medium sized round lymphoid cells with a high nuclear cytoplasm ratio, indistinct cytoplasm on haemorrhagic background. Ancillary studies or histopathology confirmation was not done in this case.

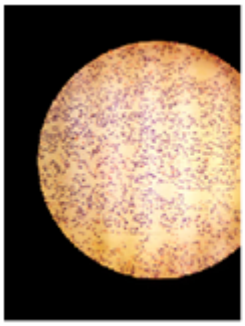

Figure 1

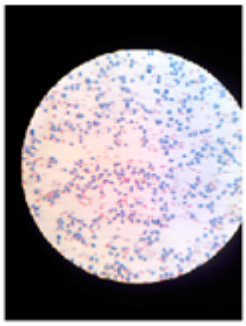

Figure 2

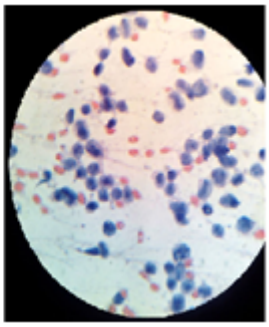

Figure 3

DISCUSSION

Ophthalmic involvement can be classified into two major categories:[1] primary or direct leukaemic infiltration,[2] secondary or indirect involvement. The direct leukaemic infiltration can show three patterns: anterior segment uveal infiltration, orbital infiltration, and neuro-ophthalmic signs of central nervous system leukaemia that include optic nerve infiltration, cranial nerve palsies, and papilloedema. The secondary changes are the result of haematological abnormalities of leukaemia such as anaemia, thrombocytopenia, hyperviscosity, and immunosuppression. These can manifest as retinal or vitreous haemorrhage, infections, and as vascular occlusions.[7] With evolving diagnostic and therapeutic advances, the survival of patients with acute leukaemia has considerably improved. This has led to an increase in the variability of ocular presentations in the form of side effects of the treatment and the ways leukaemic relapses are being first identified as an ocular presentation. The correct diagnosis is a must for adequate therapy. The treatment is similar to that for ALL, even in cases of isolated tumors with no blood or bone marrow involvement. Radiotherapy has been proposed in association with chemotherapy for patients with massive tumors.

CONCLUSION

We may state that the present case was cytologically evaluated and interpreted as leukemic infiltration in known case of A.L.L. The correct recognition of this entity and differentiating it from other mimics are crucial to proper patient management and appropriate follow-up. Radiation has been given for leukaemic infiltration of the eyes (both anterior and posterior) and for the orbit. It is emphasized that ocular involvement threatening vision loss may occur in leukemia despite complete hematologic and bone marrow remission. It is suggested that early radiotherapy may be useful in preventing vision loss. Local irradiation along with systemic chemotherapy for underlying disease can help resolve iris infiltration, pseudohypopyon, and the accompanying elevated intraocular pressure.

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