Acute Bilateral Proptosis as an Initial Presentation of Acute Myeloid Leukaemia in a Nine-years Old Boy: A Case Report

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Background: Orbital infiltration with bilateral proptosis has been observed in 2% of cases of acute and chronic lymphatic leukaemia. Acute myeloid leukaemia (AML) rarely presents with orbital infiltration. Acute myeloid leukaemia is an overproduction of malignant clones of immature myeloid cells called myeloblasts or blast cells which replaces bone marrow and invades other tissues.

A literature review suggests that leukaemia might be the most likely diagnosis in a child with bilateral soft tissue orbital tumours. We present an unusual case of AML with acute bilateral proptosis.

Case Report: J A is a nine-years old boy who presented with a two-week history of painful bilateral protrusion of the eyes , fever, headaches, loss of vision, abdominal and leg pains. There was no history of trauma or sinusitis. Systemic examination revealed an ill-looking boy, who was afebrile, pale, with peripheral lymphadenopathy. There was hepatosplenomegaly but no focal neurological deficits. His visual acuity was 6/60 (right), and CF at 3m (left). He had right axial proptosis of 22mm with extra-ocular motility restriction in all directions of gaze. On the left, there was moderate eyelid oedema and axial proptosis of 40mm with restriction of extra-ocular motility in all directions of gaze. There was moderate chemosis and exposure keratopathy affecting inferior third of the cornea. An assessment of acute bilateral orbital cellulitis was made with differential diagnoses of orbital leukaemia or lymphoma. He was immediately commenced on empirical parenteral antibiotics.

At presentation

Before death

Complete blood count(CBC) results were Packed Cell Volume (PCV)- 25.7%, White Blood Cell (WBC) count- 36.7×10^9, lymphocytes- 47.3%, granulocytes- 25.7%, platelets 12×10^9.Blood film revealed myeloblasts constituting more than 50% of white cells and few dysplastic neutrophils. Bone marrow aspiration biopsy showed increased myeloblasts with dysplasia with an diagnosis of acute myeloid leukaemia with myelodysplasia related changes.Patient was transferred to the Paediatric Haemato-oncology unit and commenced on chemotherapy pre-induction medications as follows; Tabs Allopurinol 100mg tid, Tabs fluconazole 100mg stat, 50mg daily, Tabs co-trimoxazole 480mg alternate days, IV ranitidine 150mg bd, Tabs vitamin C 100md tid, Tabs zinc gluconate 20mg daily, Ovules vitamin A 200,000daily, and hyperhydration with intravenous fluids. Patient developed bloody diarrhoeal stools with a rapid drop of PCV and died before commencement of induction chemotherapy with cyclophosphamide, vincristine, Ara-C and prednisolone.

Conclusion: In children presenting with rapidly growing orbital masses and bilateral proptosis, AML should be kept in the differential diagnoses. To ensure an early diagnosis, peripheral blood smear, along with bone marrow aspiration biopsy should be considered in all cases.

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