Fairooz P. Manjandavida, M.D., Bangalore, India Carol L. Shields, M.D., Philadelphia, USA

Traumatic retrobulbar hemorrhage?

Case Report

An 11-year-old boy with left eye (OS) proptosis was referred for retrobulbar hemorrhage (RBH). The child had fallen down 1 week ago followed by progressive upper eyelid discoloration and bulging OS. On examination, he was febrile and irritable. Detailed ocular examination showed a best-corrected visual acuity of 6/9 in the right eye (OD) and 6/36 in OS. There was periorbital fullness in both eyes with upper eyelid ecchymosis, proptosis, and inferior dystopia with chemosis of OS (Figure a, arrow). An ill-defined nontender mass was palpable in the superomedial orbit OD and in the entire superior orbit OS. Ocular motility was limited in all direction in OS with Grade 1 afferent defect. Fundus showed optic disc hyperemia in OS.

What is Your Next Step?

- a. Conservative management of RBH
- b. Attempt drainage of RBH
- c. Peripheral blood smear (PBS) and complete blood count
- d. Orbitotomy and biopsy



Findings

Preauricular, submandibular, and cervical lymph nodes were palpable. Computed tomography imaging confirmed bilateral orbital mass with diffuse involvement of the left orbit (Figure b, arrows) and with associated right maxillary sinus haze. There was pancytopenia. PBS showed sheets of myeloblasts (Figure c)with scanty basophilic cytoplasm with Auer rods, high nuclear: cytoplasmic ratio, open chromatin, and conspicuous nucleoli suggestive of leukemia (Figure d, arrow showing Auer rods). Systemic chemotherapy was initiated.

Diagnosis: Bilateral granulocytic sarcoma in acute myeloid leukemia (AML) – non-M3.

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Correct Answer: c. Discussion

Orbital tumors in children can be misdiagnosed as infection or inflammation. Often, parents attribute symptoms to trivial trauma that the child might have sustained, leading to clinical confusion. Granulocytic sarcoma, also known as chloroma or extramedullary myeloblastoma, typically occurs in children, and should be suspected especially in those presenting with bilateral proptosis with or without ecchymosis or orbital hemorrhage.^[1] Ocular findings can be the initial manifestation of underlying AML and other myeloproliferative disorders.^[1,2] Often preceding the blast phase, granulocytic sarcoma can occur in 2%-9% of AML cases.^[3] Differential diagnosis includes Burkitt's lymphoma, metastatic neuroblastoma, and rhabdomyosarcoma. A simple PBS helps confirm the diagnosis. This malignancy is very sensitive to chemotherapy, and radiotherapy is reserved for localized chloroma if necessary.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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Fairooz P Manjandavida, Prabha Eye Clinic and Research Center, Bengaluru, Karnataka, India,

Smitha K Shambhu, Prabha Eye Clinic and Research Center, Bengaluru, Karnataka, India,

Carol L Shields, Wills Eye Hospital, Philadelphia, Pennsylvania, USA

Dr. Fairooz P Manjandavida, Orbit and Ocular Oncology Service, HORUS Specialty Eye Care, Bengaluru, Karnataka, India. E-mail: dr.fairooz@yahoo.com

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