

Pediatric Orbital Langerhans Cell Histiocytosis With Dural Involvement Requiring Orbital Roof Reconstruction: A Case Report

Christopher Branstetter¹, Robert Branstetter IV², Brandon Byrd, MD, PhD³, Oritsejomi Roberts, MD^{4,5}, Mohamad Masoumy, MD, MBA, MS, FACS^{3,5}

¹School of Medicine, ²Department of Ophthalmology, ³Division of Plastic and Reconstructive Surgery, ⁴Department of Neurosurgery, Louisiana State University Health Sciences Center, New Orleans, LA; ⁵Manning Family Children's Hospital, New Orleans, LA

Abstract

We present a rare case report describing the clinical course of a 7-year-old female presenting with left periorbital swelling, initially managed as pre-septal cellulitis. Periorbital swelling was unresponsive to multiple antibiotic treatments. Magnetic resonance imaging (MRI) of the head and orbits revealed a $2.3 \times 2.4 \times 2.1$ cm mass involving the superolateral aspect of the left orbit. The lesion was predominantly hypointense on T1-weighted images and demonstrated mixed signal intensity on T2-weighted images. Postcontrast imaging demonstrated peripheral enhancement with internal septations.

Concerns for mass effect due to tumor size and location prompted surgical resection, with tissue pathology confirming the diagnosis of Langerhans Cell Histiocytosis (LCH). Given the high-risk orbital location, the patient completed a 49-week course of vinblastine and prednisone. At ten-month follow-up status post chemotherapeutic, she remained clinically stable with no radiographic recurrence. This case highlights the importance of considering rare diagnoses in pediatric patients with atypical or non-responsive symptoms, particularly when clinical or laboratory findings do not support infectious causes.