An Unusual Orbital Mass with Dural Tail Signs

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Key words: dural tail, Langerhans cell histiocytosis, meningioma

(Intern Med 51: 2063-2064, 2012)
(DOI: 10.2169/internalmedicine.51.7944)

A 13-year-old boy presented with a one-month history of right retrorbital and frontotemporal pain and progressive exophthalmia. His vision and hearing were normal. Brain CT showed an osteolytic mass of the right sphenoid wing, extending into the optical cavity (Picture 1). The first impression was meningioma, based on a characteristic “dural tail” on the post-contrast MRI (arrow in Picture 2). However, biopsy of the mass yielded a diagnosis of Langerhans cell histiocytosis (LCH) via the immunohistochemical study showing numerous multinucleated giant cells with positive CD1a staining (Picture 3, 400 × magnification).

The differential diagnoses of a solitary osteolytic lesion in the orbital cavity include benign or aggressive tumor, infection, and granulomatous disease. Among these, orbital LCH is extremely rare, accounting for less than 1% of all orbital tumors. Intriguingly, while a dural tail is always, although not exclusively, seen with meningiomas, orbital LCH can rarely mimic a sphenoid meningioma (1). Of note, intracranial LCH can be differentiated from meningiomas by cranial CT demonstrating the lack of hyperostosis and bony erosions in meningiomas (2).

The authors state that they have no Conflict of Interest (COI).
References