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Pediatric oculomotor schwannoma: A case report of a rare condition and the role of high-resolution MRI in diagnosis

Shadi Boqaaiya

Ziv Medical Center, Israel

Background: Oculomotor schwannomas in pediatric patients are exceedingly rare, particularly when not associated with neurofibromatosis. Diagnosis can be challenging due to the non-specific nature of the clinical presentation and the limitations of conventional imaging techniques. This case report highlights the critical role of high-resolution MRI in the identification of a rare oculomotor schwannoma in a 2.5-year-old child.

Case Presentation: A previously healthy 2.5-year-old child presented with left ptosis, exotropia, mydriasis, and headache. Initial neuroimaging, including CT, CTA, and standard MRI, failed to identify any abnormalities. However, high-resolution MRI revealed an ovoid mass adjacent to the left oculomotor nerve in the superior cavernous sinus. The lesion, measuring 5 mm, demonstrated homogeneous enhancement post-contrast, consistent with a schwannoma. Following the initiation of steroid therapy, the patient showed significant clinical improvement, including enhanced ocular movement and reduced ptosis.

Discussion: Oculomotor nerve schwannomas present with complete third nerve palsy, commonly seen with other cavernous sinus lesions. In our case, advanced imaging, specifically high-resolution MRI, was pivotal in detecting the lesion in the cavernous sinus. Despite initial inconclusive results with conventional imaging, high-resolution MRI's fine slice thickness allowed for the detection of a small, millimeter-sized tumor. The patient responded well to steroid therapy, emphasizing the need for an individualized approach in managing pediatric schwannomas. This case underscores the importance of high-resolution MRI in diagnosing pediatric oculomotor schwannomas, a rare condition with limited documentation in the literature. Advanced neuroimaging techniques, including high-resolution MRI and Diffusion Tensor Imaging (DTI), should be considered in pediatric cases presenting with oculomotor nerve palsy. Further research into the diagnosis, management, and long-term outcomes of these tumors is essential to improve clinical understanding and treatment strategies.

Keywords: Pediatric, oculomotor schwannoma, third nerve palsy, high-resolution MRI, neuroimaging, steroids.

Biography

Shadi Boqaaiya, a physician at Ziv Medical Center, Department of Ophthalmology, Safed, Israel. Present he working on a case series and literature review regarding the treatment approaches, survival rates, and the impact of orbital exenteration in patients with rhino-orbital mucormycosis. Additionally, he is conducting a meta-analysis on the use of Diclofenac (Voltaren) in post-cataract surgery patients to reduce pain, inflammation, and the incidence of cystoid macular edema [CME]. I have a strong interest in medical research and am still in the early stages of my ophthalmology career.

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