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Lateral orbitotomy in the management of an intra-orbital lipoma. A case report

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Keywords
exophthalmia,
lateral orbitotomy,
lipoma,
orbital

Abstract

Introduction: Lipomas are benign subcutaneous mass, but the intra-orbital location is rarely reported in the literature and it can resemble a variety of other orbital lesions.

Case report: We describe a 15-year-old girl who presented with left exophthalmia. Orbital magnetic resonance imaging showed an encapsulated intra-conal mass displacing the optic nerve medially, the external right muscle laterally and the globe anteriorly. Excisional biopsy of the mass by lateral orbitotomy approach resolved the exophthalmia, and histology revealed a primary orbital lipoma.

Conclusion: The diagnosis of an intra-orbital lipoma is not easy and the surgical approach represents a challenge to achieve a total excision while avoiding complications.

Introduction

Lipoma is a benign mesenchymal neoplasm composed of mature adipose tissue surrounded by a fibrous tissue capsule[1]. The majority is developed in the subcutaneous soft tissue in the neck, shoulder and back, but it is uncommon in the orbital region[2]. We describe a case of exophthalmia caused by an intra-orbital lipoma and review of the literature.

Case report

A 15-year-old Moroccan girl, admitted to our department for treatment of a progressive left exophthalmia for 06 months. There was no history of trauma, visual disturbances, and significant ocular or medical histories. On ocular examination, she had visual acuity of 20/20 in both eyes with a left axile, reducible and non-pulsatile exophthalmia. Orbital Magnetic Resonance Imaging (MRI) revealed an encapsulated intra-conal mass (2.5 x 1,7 x 0,5 cm) in the posterolateral compartment of the left orbit. The mass was displacing the optic nerve medially, the external

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right muscle laterally and the globe anteriorly with resultant exophthalmia. Hypointense at T1 and hyperintense at T2 taking the contrast (Figure 1-2). A left lateral orbitotomy approach was utilized with an excisional biopsy (Figure 3-4). Histopathological evaluation revealed well-encapsulated, mature adipose tissue consistent with a primary orbital lipoma. After surgery, exophthalmia had subsided with a normal ocular motility.

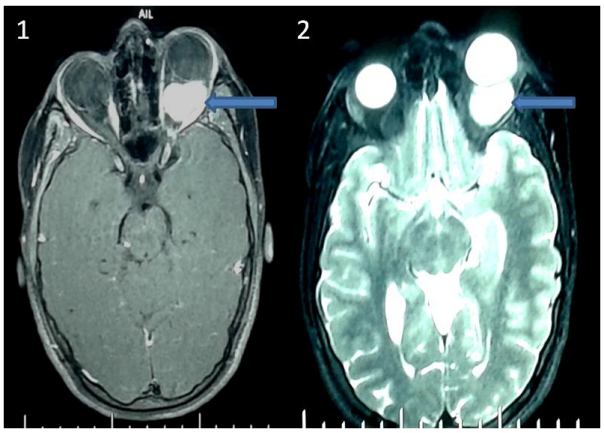

Figure 1. Post contrast axial T1-weighted MRI showing hyper intense lesion (arrow).
Figure 2. Axial T2-weighted MRI showing hyper intense lesion (arrow).

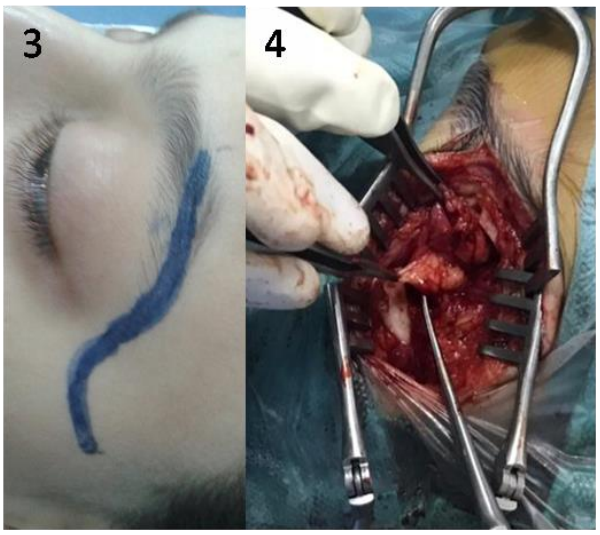

Figure 3. Preoperative photograph showing the incision for a left lateral orbitotomy.
Figure 4. Intra-operative photograph showing tumor excision.

Discussion

Lipoma is a benign lobulated tumor composed of mature adipose tissue surrounded by a fibrous tissue capsule. Frequently it is localized subcutaneously around the torso, neck, and proximal limbs[3], but in the orbital region is uncommon with the reported incidence of 0.6% in adults and 2.8% in children[4].

The exact etiology of lipoma formation is unknown, but there are instances following trauma[4,5]. Also some hypotheses have been mentioned as hypertrophy theory (the growth of the tumor is caused by obesity) and metaplasia theory (the growth of lipoma occurs due to differentiation of mesenchymal cells into lipoblast)[6].

Generally, orbital lipoma slow growing and often asymptomatic until large enough to be palpable, visible or cause mass effect. Rarely grows and compresses the optic nerve causing disturbance in visual function[7].

The radiological appearance of orbital lipoma, on computed tomography the tumor has a distinctive low attenuation with a finely defined border. On MRI it is generally hyperintense on T1-weighted imaging and indistinct to orbital blood on T2-weighted images, hypointense after fat suppression. However, it is not enhanced after contrast images[8], but in our case the lesion was hyperintense.

Due to the various presentations of lipoma, the diagnosis is not always easy and other orbital masses should be considered in the clinical differential diagnosis, such as dermoid cyst, fibrous histiocytoma, schwannoma and cavernous hemangioma[9].

The recommended treatment is the surgical excision and it is a challenge because of the complex anatomy of the orbital structures[10,11]. In our case, the patient was operated by a lateral orbitotomy with removal of the tumor. The long-term outcome after surgery is seen to be excellent however, recurrence of the tumor may occur due to incomplete excision[12].

Conclusion

We present a case of a rare intra-orbital tumor whose surgical approach such as lateral orbitotomy is a real challenge for neurosurgeons.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Abbreviations

MRI: Magnetic resonance imaging

Author's contributions:

C M: manuscript writing; A L and A K: manuscript preparation; B E and M G: manuscript analysis. All authors read and approved the final manuscript.

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Conflicts of interest

The authors declare no potential conflict of interest

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