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Orbital lipoma. A rare case report from India with review of literature

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ABSTRACT

Orbital lipomas are uncommon benign tumors with only a few reported cases in literature. They are usually asymptomatic and exhibit gradual growth. We rendered such a rare case of primary lipoma in the orbital region with interpreted symptoms of ocular pain, reduced vision, and mild proptosis. Right fronto-orbital craniotomy with gross total excision of the tumor was done. Histological examination suggested a final diagnosis of lipoma. Post-operatively, the patient developed mild ptosis. During follow-up, ptosis completely subsided and significant improvement in vision was noted.

Keywords
craniotomy,
orbital lipoma,
surgical excision

INTRODUCTION

Lipomas are typical mesenchymal neoplasms which mostly occur in the subcutaneous tissues in the neck, shoulder, and back and are usually seen in persons of 40 years and above (1). Even though there is presence of abundant fat in the periorbital and the retrobulbar space, however, lipomas in the orbital region are still extremely rare (2). The incidence of primary orbital lipomas was reported to be ~ 0.6 % in a pooled orbital tumor series (2). These rare benign neoplasms typically appear as well-circumscribed masses on computed tomography (CT) and magnetic resonance imaging (MRI) (3). On conventional histology, the orbital lipomas closely resemble normal orbital fat thereby making their pathological entity doubtful (4). Rather than infiltration, the lipomas in the orbit, however, displaces the surrounding tissue and often leads to exopthalmos (5). Here in, we present a rare case of orbital lipoma diagnosed and treated in our hospital.

CASE REPORT

A 51 year old female patient presented in our Neurosurgery OPD with a history of right-sided ocular pain and reduced vision for six months. On eye examination, mild proptosis was present with visual acuity of R 6/24 and L 6/6. The extraocular movements were normal and full in every direction. She was investigated with MRI Brain and both orbits (P + C) with MR-angiography which showed right sided retrobulbar homogenously enhancing ovoid mass lesion in the intraconal compartment extending into orbital apex region and causing mass

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effect in optic nerve and adjacent extra ocular muscles (Fig. 1). Surgical intervention was planned after all necessary routine investigation and pre-anesthetic check-up. Right fronto-orbital craniotomy was done in two pieces. Extended removal of the roof and the lateral wall of the orbit were further done with the help of rongeur. Periorbita opened in a cruciat manner and extended with the help of a rongeur carefully without exerting much pressure on the intraorbital contents.

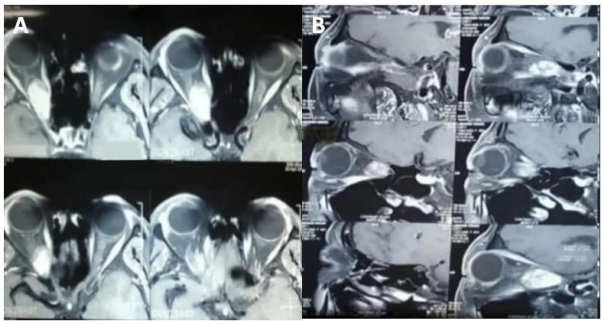

Figure 1. MRI images showed right sided orbital tumour.

Figure 2. Intra-operative image following right fronto-orbital craniectomy.

The dissection started medial to levator palpebrae superioris muscle and in between the superior rectus and medial rectus muscle. Tumor was localized super medial to the optic nerve. Internal decompressor followed by extra capsular dissection done. Tumor was found to be soft, avascular, and capsulated (Fig. 2). Total excision of the tumor was performed and homeostasis achieved (Fig. 3). Periorbital repaired with 4-0 vinyl sutures. Orbital root was reconstructed and frontal bone flap replaced. Wound was closed in layers with a subgaleal drain in situ. Post-operative recovery was uneventful. The patient developed a mild ptosis in the right eye. She was discharged in a stable condition on the 6th post operative day. Histopathological examination of the tumor tissue was suggestive of lipoma (Fig. 4). On follow up visit after two months, the patient recovered from the ptosis and showed significant improvement in vision.

Figure 3. Intra-operative image showed tumor cavity following total excision.

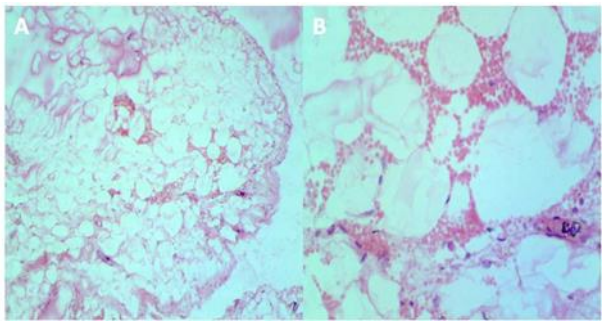

Figure 4. A) Histopathological examination of the lesion (H&E; 100X) that showed mature fat cells (adipocytes) surrounded by connective tissue. **B)** Histopathological examination of the lesion (H&E; 400X) that showed blood vessels and inflammatory cells.

Discussion

Lipomas are encapsulated benign tumors of fat cells (adipocytes) separated by fibrous septa6. They most commonly occur in the subcutaneous tissue while

lipomas in the orbit are rarely found in spite of presence of abundant lipomatous tissue (2, 7). A pooled incidence of 0.6 % has been reported in literature in a large orbital lipoma tumor series (2). However, as lipomas are very much similar to normal orbital fat, therefore, many such cases may have been misrepresented in the pre-imaging era (2). So far orbital lipoma incidence has not been reported from India. As such this is the first reported case of true orbital lipoma from this country.

Orbital lipomas are well-circumscribed masses that originate from the anterior orbit (2, 5). They may be clinically perceptible before the onset of proptosis (2, 5). In general, they show no symptoms until the tumor becomes enlarged (2, 5). In certain rare cases, orbital lipomas outgrows and compresses the optic nerve which in turn causes disturbances in ocular functions such as decreased vision, visual field defects, and relative afferent pupillary defect (8). Prolonged pressure can also result in displacement of orbital structures. Previous studies have reported about four well-documented cases of conventional orbital lipoma within the age range of 11 to 72 years and comprising of two males and two females (4, 9, 10, 11). All four patients exhibited gradual but persistent swelling of the eyes or proptosis. In our case, presented symptoms were ocular pain, decreased visual acuity, and mild proptosis.

On CT scans, conventional orbital lipomas are seen as distinct low attenuation lesions of varying densities with the occasional presence of a finely defined border (11, 12) They do not enhance in imaging upon administration of contrast agents. On MRI, typically lipomas are hyperintense on T1 weighted images and hypointense after fat suppression (4). They are normally indistinct on T2 weighted images (4). In our case, T1 and T2 weighted MRI images showed mixed signal intensities (hypo and hyper intense) lesion and post contrast T1 with fat suppression. MRI images showed enhancing lesion which was suggestive of possible atypical lipoma. Histologically, true lipomas consist of a fine capsule encompassing lobulated fatty tissue (13). Our histological examination of the tumor gave a final diagnosis of lipoma.

Gross total surgical excision is the preferred treatment of choice for conventional orbital lipoma (2). Surgical intervention gives very good long term outcome (2). It also rules out the possibility of malignancy, establishes histological diagnosis, and provides relief from any persistent symptoms (5, 14). In our case too, the lipoma was surgically excised not only for histological diagnosis but also to obtain better outcome. The result was obvious during the follow up visit where the patient showed significant improvement in vision in the right eye.

Conclusions

Orbital lipomas are extremely rare benign neoplasms. There are very few reported cases in literature. They appear as distinctive well-circumscribed mass lesions. In general, they are asymptomatic and demonstrate chronic and gradual onset of growth with dislocation of orbital structures. Surgical excision is the preferred approach for the management of these lesions for better prognosis.

References

1. Stock N. Adipocytic tumors. Ann Pathol 2015;35(1):41-53.
2. Shah NB, Chang WY, White VA, et al. Orbital lipoma: 2 cases and review of literature. Ophthal Plast Reconstr Surg 2007;23(3):202-205.
3. Chorost MS, Yakopson V, Chou E. Posttraumatic encapsulated orbital lipoma. Mil Med 2020;185(9-10):e1876-e1879.
4. Behrendt S, Werner JA, Jänig U. Lipoma of the orbit. Orbit 1996;15(2):101-104.
5. Shrestha P, Shrestha GB. Orbital lipoma as an uncommon cause of unilateral proptosis: a case report. Int Med Case Rep J 2020;415-418.
6. Jones IS, Reese A, Kraut J. Orbital Rhabdomyosarcoma: an Analysis of 62 Cases. Am J Ophthalmol 1966;61(4):721-736.
7. Ali SF, Farber M, Meyer DR et al. Fibrolipoma of the orbit. Ophthal Plast Reconstr Surg 2013; 29(3):e79-e81.
8. Chi MJ, Roh JH, Lee JH, et al. A case of orbital lipoma with exophthalmos and visual disturbance. Jpn J Ophthalmol 2009; 53(4):442-444.
9. Koganei Y, Ishikawa S, Abe K, et al. Orbital lipoma. Ann Plast Surg 1988; 20(2):173-182.
10. Poweleit AC. Congenital lipoma of the orbit. J Ky Med Assoc 1978;76(1):20.
11. Brown HH, Kersten RC, Kulwin DR. Lipomatous hamartoma of the orbit. Arch Ophthalmol 1991;240-243.
12. Mawn LA, Jordan DR, Olberg B. Spindle-cell lipoma of the preseptal eyelid. Ophthal Plast Reconstr Surg 1998;14(3):174-177.
13. Weiss SW, Goldblum JR. Benign lipomatous tumors. In: Weiss SW, Goldblum JR, eds. Enzinger and Weiss's Soft Tissue Tumors. 4th ed. St. Louis: Mosby 2001;574-581.
14. Reibel JF, Greene WM. Liposarcoma arising in the pharynx nine years after fibrolipoma excision. Otolaryngol Head Neck Surg 1995;112(4):599-602.