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Original Research Paper

Ophthalomology

CAVERNOUS HEMANGIOMA IN THE ORBITAL CAVITY: CASE REPORT

Dr Umang Thakur	Department of Ophthalmology, NSCB Zonal Hospital Mandi, Himachal Pradesh, India.
Dr Shanki koundal	Department of Pediatrics Civil Hospital Tauni Devi, Hamirpur Himachal Pradesh, India.
Dr Vatika Gupta*	Department of Pediatrics, NSCB Zonal Hospital Mandi, Himachal Pradesh, India. *Corresponding Author

ABSTRACT Cavernous hemangiomas are well circumscribed slow-growing benign malformations. These lesions can range from being symptomatic causing diplopia, proptosis, and visual disturbance due to optic nerve compression, or can be asymptomatic and diagnosed unintentionally in imaging. Diagnosis can be made by contrast-enhanced computed tomography, magnetic resonance imagining, and color doppler. Treatment depends upon the symptoms of the patient. Few cases can be managed by a conservative approach while others need surgical treatment. The vital and functional prognosis is generally good, and the recurrence is almost exceptional.

We report the case of a 60-year-old patient who presented with a decrease in visual acuity of his right eye caused by cavernous haemangioma of the orbit.

KEYWORDS : Cavernous hemangioma, Benign tumors, CT, Surgical approach, Orbitotomy

INTRODUCTION

Cavernous haemangioma of the orbit is a rare vascular tumor, The average age of onset of symptoms is between the fourth and fifth decade of life.

Diagnosis can be made by contrast-enhanced computed tomography, magnetic resonance imagining, and color doppler. The vital and functional prognosis is generally good, and recurrence occurs in very few cases. A proper diagnosis is the most important step for selecting the best therapeutic approach. Treatment depends upon the symptoms of the patient. Few cases can be managed by a conservative approach while others need surgical treatment.

It is a slow-growing tumor. As the tumor grows it affects visual function and ocular motility. But due to slow growth features this tumor has a good vital and functional prognosis, despite its generally intra-conical retrobulbar location.This case report aims to review the clinical and para-clinical aspects of cavernous in order to facilitate diagnosis, and also to define the place of the different surgical approaches to the orbit, and more specifically the external approach.

Case Presentation

A 60-year-old man, without medical or surgical history, presented to the ophthalmology clinic with complaints of Forward protrusion of the right eye for 8 years and progressive decrease in visual acuity of the right eye with retro-orbital pain on the same side. There was no history of discharge, ocular trauma, surgery, nasal obstruction, or diplopia. The best-corrected visual acuity (BCVA) was 6/24 in the right eye with a refraction of (+2.50 DS) and 6/6 in the left eye with a refraction of (+0.75); There was axial proptosis(24mm in the right eye and the right eye with the inferior scleral show. The fullness of the superior orbital sulcus along with mild ptosis was also appreciable in the right eye (FIG I). Extraocular movements of the right eye have been restricted in upgaze. There was a Relevant afferent pupil defect in the right eye and the fundus examination showed few choroidal folds in the posterior pole in the right eye.

Fig (I)

Optical coherence tomography of the right eye was performed, which confirmed the choroidal folds (Fig. 2). The rest of the ophthalmologic examination was unremarkable with no inflammatory signs, no visible pulsations, and no dilated vessels. Valsalva maneuver was Negative. The overlying skin was normal. No increase in swelling with bending or straining. no exophthalmos and ocular auscultation was without abnormality.

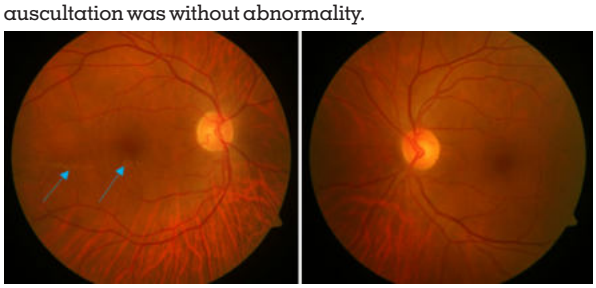

Fig IIA **Fig** IIB

Fig. II OCT which shows in the right eye choroidal fold (Marked with arrow) in contrast to the left eye.

Orbital CT scan revealed an Ovoid, well-circumscribed mass with patchy enhancement, retrobulbar, intraconal, homogenous mass causing forward, outwards displacement of the globe. Mass indenting the globe. Optic nerve displaced medially(Fig III)

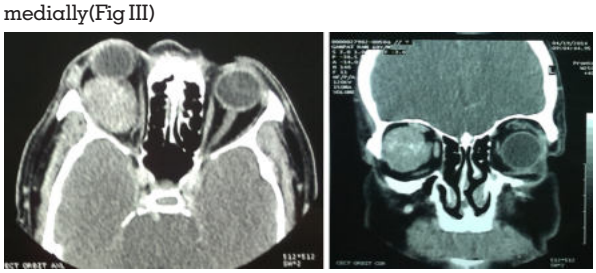

Fig IIIa **Fig** IIIb

Fig. IIIa,b CT scan of the orbit showing a well-circumscribed right intraconal tissue process posterolateral in location, with an intense enhancement and pushing back the optic nerve causing stage 2 exophthalmos.

The patient underwent a trans-conjunctival anterior orbitotomy with mass excision. The gross specimen shows a

capsule and honeycomb appearance on the cut surface. Round to oval, soft reddish-blue mass. The surface has nodular irregularities owing to large cavernous blood spaces just beneath the thin capsule 3.00X 2.8X2.6 cm. Histopathological examination shows tissue composed of large, dilated vascular lakes lined by flattened endothelial cells Fibrous tissue in the interstitial, smooth muscle cells in the walls of cavernous spaces, spaces >1 mm, and a fibrous capsule in the periphery suggested of cavernous haemangioma

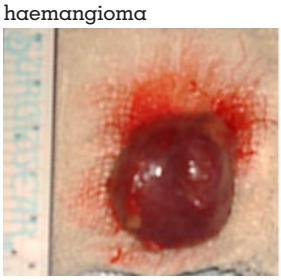

Fig IVa

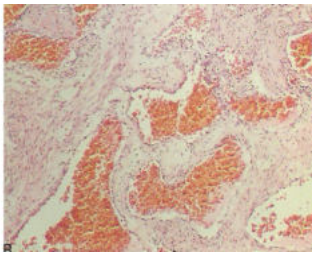

Fig Ivb

The immediate postoperative course was simple, with the occurrence of eyelid ecchymosis and right chemosis completely regressing in a few days. Furthermore, the patient did not have postoperative ptosis, nerve damage, or other complications.

DISCUSSION

Cavernous hemangioma is the most common benign orbital lesion in adults. It is usually a solitary, unilateral condition [1]. Although Cavernous hemangioma is reported in infants with diffuse neonatal hemangiomatosis, lesions generally remain asymptomatic until adulthood, with the fourth and the fifth being the most affected decades [2]. About 60% of cases occur in women, and recent evidence seems to suggest there may be an influence of female sex hormones on the clinical course of CHO [3].

Cavernous hemangioma should be more correctly defined as a venous malformation than as a neoplasm. For this reason, according to the International Society for the Study of Vascular Anomalies, CHO should be classified among low-flow non-distensible venous malformations. It consists of thrombosed and septated venous convolution, covered by a compact and strong fibrous capsule [4].

The most common anatomic location of Cavernous hemangioma is the middle third of the orbit, occurring more frequently within the intraconal space and leading to progressive axial proptosis, which is the most common sign and symptom of CHO (accounting for about 70% of cases) [5]. Exophthalmos is often progressive, may or may not be axile depending on the anatomical location, is non-pulsatile, and is painless, except in the event of a complication (inflammatory, hemorrhagic, or thrombotic). The mode of discovery is sometimes fortuitous. Intra-conical tumors compress the posterior surface of the globe and lead to hyperopia. Decreases in visual acuity occur due to compression of the optic nerve with choroidal folds in the fundus, or even papillary edema.

Imaging contributes greatly to the diagnosis. On ultrasound, the cavernous hemangioma is visible as a homogeneous, hyper-echogenic, and well-defined mass. It shows large vascular spaces containing a low flow well evidenced by the color Doppler ultrasound. On computed tomography, the lesion is well-defined, encapsulated, and hyperdense, increasing slightly after injection but less than the adjacent muscles. Magnetic resonance imaging should assess the possible compressive impact, especially on the optic nerve. The lesion is oval and well-defined. A typical Cavernous hemangioma appears as a well-defined homogeneous mass showing isointense or slight hypo-intense in T1-weighted sequences and hyperintensity to muscles in T2-weighted sequences, which is strongly suggestive of the diagnosis. Contrast enhancement is also characteristic, and it is heterogeneous at the start and then becomes homogeneous over time (5 minutes at the latest) [6].

Surgical treatment is indicated only in symptomatic patients. [7].

The most serious complication of orbital cavernous hemangioma surgery is blindness due to damage to the optic nerve. It can be related to direct damage, traction of the nerve, or a lesion of its vascular supply.[8] The optic nerve decompression, particularly for tumors located in the orbital apex and with a tight relationship with the optic nerve, is useful to reduce the intraoperative traction of the nerve during tumor dissection. The outcome in ocular motility depends on the accuracy of the tumor dissection and the total removal of the tumor.[9] Palpebral ptosis and ocular movement impairment can result from overstretching or contusion of the extraocular muscles during tumor dissection [10].

In general, the potential factor that resulted in postoperative visual impairment was the difficulty of the tumor removal, and adhesion to the optic nerve, periosteum, or muscles. The tumor located at the apex or medial of the optic nerve was very likely to be difficult to remove, and consequently would be followed by postoperative visual impairment [10].

Go to:

CONCLUSION

Cavernous hemangioma is a common finding in adult patients with slow-developing proptosis and other signs of an orbital mass. The correct diagnosis is made in most cases with the help of imaging techniques such as Ultrasound, CT, and magnetic resonance imaging. Treatment is not always required but is usually indicated in the presence of clinical manifestations. Surgery is still the most used treatment for this condition.

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