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A case series of choroidal lesions and their unique presentation

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Abstract
Background: To investigate the clinic-pathological manifestations of different choroidal lesions in aiding better diagnosis.
Method: Patients aged 29, 21, 56years presented with visual acuity deficit due to focal choroidal lesions. Anterior segment: Normal in first two cases.
56year old patient had festooned pupil right eye with 1+ cell's in anterior chamber
Fundus:
Case 1: A well-defined lesion which appears elevated with scalloped margins in juxta papillary region with similar lesion in the left eye
Case 2: Bilateral single well defined choroidal lesion in the posterior pole beneath superotemporal arcade with sub retinal fluid present.
Case 3: A raised grey white lesion the temporal posterior pole near macula.
Result: Diagnosis of bilateral choroidal osteoma, choroid granuloma secondary to TB with crohns and choroidal granuloma secondary to toxoplasmosis was considered respectively and treated.
Conclusion: Every choroidal lesion has special characteristics, and supported ancillary testing aids in diagnosis and treatment.

Keywords: choroid; granuloma; osteoma; ocular tuberculosis

Introduction

Case report: Choroidal tumors comprise a diverse group of benign and malignant lesions due to abundant vascular supply. Thus remains the most common site for ocular metastasis and spread of any form of infection. Considering the innumerable causes of choroidal masses such as infection, inflammation, malformation or neoplasm. Diagnosis is often not nonspecific most of the times and requirement of ancillary tests to aid diagnosis and management.

Case 1: A 29 year-old male presented with blurring of vision which was gradual in onset, progressive in nature in both eyes since 1year. On examination, her best corrected visual acuity was 6/18 in the right eye and 6/24 in the left eye. Fundus examination showed an elevated well defined yellow white lesion with scalloped margins in the juxtapapillary and perifoveal region and left eye showed flat yellow lesion with well-defined margins extending around peripapillary area beyond macula by 1 disc dioptres (Figure 1).
Fluorescein angiography showed hyper fluorescence of the lesion in the early phase with mottled appearance, and a diffuse hyper fluorescence of the lesion in the late phase. ICG showed feeder blood vessels on the anterior surface of tumour. B Scan showed elevated choroidal lesion with acoustic shadowing. Diagnosis of choroidal osteoma was made and was referred to specialist for further management.
Our initial differential diagnosis included choroidal metastasis, amelanotic choroidal melanoma, and choroidal granuloma.

Case 2: A 21 year-old male presented with blurring of vision which was sudden in onset, rapidly progressive in nature in the right eye more than left eye over 20days. No history of prior non-ocular malignancies or no concurrent extra-ophthalmic foci of possible primary or metastatic

malignancy. Patient was on infliximab therapy for chron's disease. On examination, his best corrected visual acuity was 6/30 in the right eye and 6/24 in the left eye. Fundus examination revealed an elevated yellow white lesion with well-defined margins at the posterior pole beneath the superotemporal arcade with sub-retinal fluid (Figure 2).

Fluorescein angiography showed a hypo fluorescence of the lesion in the early phase with few thin intralesional vessels, and a diffuse hypo fluorescence of the lesion in the late phase (Figure). Our initial differential diagnosis included choroidal metastasis, amelanotic choroidal melanoma, and choroidal granuloma. On systemic evaluation foci of tuberculosis was detected in the ileum and coincidental chron's disease was noted. Patient was managed with antitubercular therapy and a dose of oral steroids.

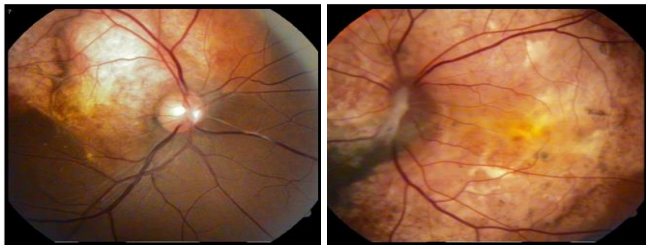

Fig 1: Showing fundus image of right and left eye

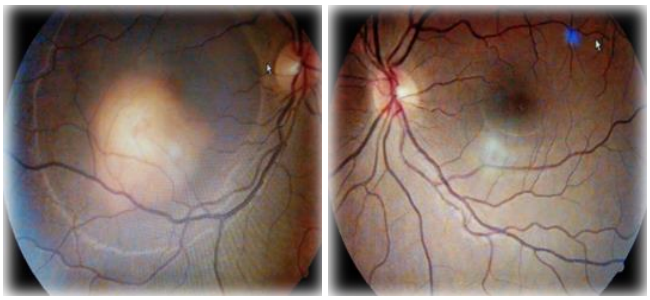

Fig 2: Showing fundus image of right eye (chroidal granuloma) and left eye

Case 3

A 56 year-old woman presented with decreased vision in right eye since 1year. Her best corrected visual acuity was 6/60 in the right eye and 6/36 in the left eye. The anterior segment of right eye showed festooned pupil with 1+ anterior chamber reaction. Left eye showed no signs of inflammation. Vitreous was normal with no cells or haze. On fundus examination showed single yellow choroidal mass with ill-defined margins in the left eye with dimensions of 15 × 20 mm located in the posterior pole and left eye showed evidence of old choroiditis surrounded by a circular band of haemorrhage. Exudates and sub retinal fluid was adjacent to the lesion.

Fluorescein angiography showed inhomogeneous hypo fluorescence and late hyper fluorescence. Optical coherence tomography showed that the increased thickness of the retina was related primarily to the hypo reflective intraretinal cavities.

Ocular ultrasonography showed a solid elevated mass. Her laboratory investigations revealed normal haemoglobin level, normal total leucocytes count and a raised Erythrocyte Sedimentation Rate. A chest radiograph showed patchy opacities in both lungs. Mantoux test revealed an induration of 12 mm after 72 hours. Sputum smear was found positive for Acid Fast Bacilli. Based on bacteriological, radiological findings, diagnosis of solitary tuberculous choroidal granuloma secondary to pulmonary tuberculosis was established. Then standard treatment for tuberculosis using four first line drugs (isoniazid, rifampicin, pyrazinamide, and ethambutol) was given to the patient for a 2-month initiation phase. After this period a follow-up examination showed a resolution of the signs and a 4-month consolidation phase was followed using the two first-line drugs (isoniazid and rifampicin).

Discussion

Choroid is a highly vascular structure provides up to 85% of the ocular blood flow [1]. In addition to these it also plays an important role in thermoregulation, secretion of growth factors and adjustment of retina by changes in choroidal thickness. Thus is a site for various pathologies such as layer life-threatening malignant melanomas and metastases to an benign nevus or haemangioma [2]. Thus, awareness among clinicians about the fact that a primary or secondary malignancies of choroid can mimic image of a choroidal benign tumors such as infectious or inflammatory granuloma or circumscribed haemangioma.

The incidence of choroidal osteoma is extremely rare. Carol *et al*. 61 cases of choroidal osteomas out of 71 eyes evaluated. They found that choroidal osteoma showed evidence of growth in 51% of eyes and decalcification in nearly 50% of eyes by 10 years. In their series, decalcification of choroidal osteoma was usually associated with poor vision. Patients with decalcified tumors showed poor visual acuity in 48% eyes as compared with only 11% of those without decalcification. Decalcification was hence considered as a significant risk factor for poor long-term visual acuity.

Decalcification occurs due to alterations in overlying Retinal pigment epithelium and atrophy of choriocapillaris, both of which lead to photoreceptor degeneration and poor visual acuity.

Freton and Finger [4] reported spectral-domain OCT analysis of choroidal osteoma of 11 patients and found that overlying choroid was compressed by the tumour in eight cases, and the retina exhibited degenerative changes in five cases. Among these five cases, retinal changes, tumour decalcification was noted in one case (20%) and mechanical compression of tumour was noted in four cases (80%).

In contrast, Multiple choroidal tubercles are reported to be the most common intraocular manifestation of tubercular posterior uveitis. Less commonly, intraocular TB may present as a large tuberculoma: a solitary yellowish or greyish white large lesion, generally located in the posterior pole [5]. A surrounding exudative retinal detachment can occur due to tissue destruction secondary to liquefactive necrosis as result of rapid multiplication of the bacilli.

Imaging techniques, such as fluorescein angiography and B-scan, can assist in excluding other diagnoses, especially intraocular tumors or infective abscesses [6]. Optical coherence tomography is often helpful in differentiating choroidal granulomas from other non inflammatory conditions. With appropriate diagnosis and treatment visual recovery and choroidal tuberculoma involution to a flat inactive scar can occur.

A great variety of lesions may involve the choroid ranging from benign to malignant lesions. Only some characteristics allow diagnosing them. Bilateral or multifocal lesions are more likely to be metastatic, infectious or inflammatory.

Whereas, solitary lesions are often benign in origin or a primary neoplasm of the choroid. Ancillary testing is helpful to distinguish these conditions, and may prevent unnecessary misdiagnosis and aids in treatment. Knowledge of associated ocular and systemic conditions is also helpful in the recognition of some of these tumors.

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