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Vision loss due to Choroidal Metastasis: A presenting feature of lung cancer

Dr Prabhav Bansal | MBBS, Dr Prabhav Bansal, Resident, Dept Of Ophthalmology, Army Hospital (R&R), Delhi cantt

Dr. Raji Kurumkattil | MS, DNB, Assistant Professor, Dept Of Ophthalmology, Army Hospital (R&R), Delhi Cantt - Corresponding author

ABSTRACT

Purpose: To report a case of carcinoma lung presenting primarily as a symptomatic choroidal mass.
Case Report: Healthy male patient, with no other significant medical or surgical illness presented to the eye department with the history of blurring of vision in his right eye. Ophthalmology examination revealed gross diminution of vision in his right eye with a choroidal mass and exudative retinal detachment. On systemic evaluation he was detected to have multiple lesions in his left lung which later on proved to be adenocarcinoma lung with multiple brain and ocular metastasis.
Conclusion: Though rare, advanced carcinoma lung can present primarily as a choroidal lesion with reduced visual acuity. High index of suspicion and meticulous work up is required to detect and treat the primary lesion while dealing with a choroidal mass.

KEYWORDS | Diminution of vision; choroidal mass; adenocarcinoma.

Introduction:
Uveal tissue, especially choroid is the commonest site of ocular metastasis because of its high vascularity[1]. Carcinoma breast is the commonest cause of ocular metastasis, and its incidence is reported to be around 41%[2]. Metastasis due to carcinoma lung constitutes approximately of 7% of all choroidal metastatic lesions[3]. Other than melanoma, malignancies of gastro intestinal tract, prostate, thyroid, kidneys and testes are the other sources of choroidal metastasis.4 . By the time patient develops ocular lesions they will be having systemic symptoms because of the primary lung lesions. So far only few cases of carcinoma lung have reported in which loss of vision as the initial presentation. In almost all cases it is seen in the advanced stage of malignancy with dissemination to other vital organs like brain and bones. In such cases life expectancy is shortened and most of them have a poor prognosis.

Case Report:
40 years old male, a non- smoker, with no previous ocular or systemic illness, presented with, 15 days history of diminution of vision in his right eye. His visual acuity was hand movements close to face in right eye and 20/20 in the left eye. Pupillary reaction in the right eye showed grade I relative afferent pupillary defect (RAPD). Slit lamp examination of the anterior segment was unremarkable. Retinal examination revealed large area (around 10Disc Diameter) of exudative retinal detachment involving macula with shifting fluid and subretinal mass in the right eye (Figure1A &B). Fundus fluorescein and Indocyanine green angiography showed hypofluorescence in the early arterial and venous phase followed by late hyperfluorescence (Figure 2). On ultrasound AB Scan, a subretinal mass was demonstrated. Optical coherence tomography revealed elevated lesion from choroid, distorted foveal contour and subretinal fluid (Figure 1C&D).

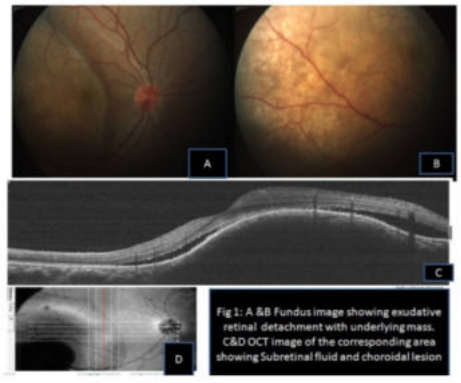
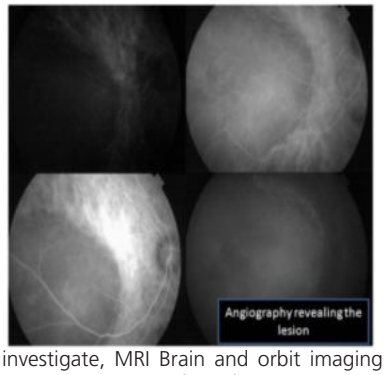


Fig 1: A &B Fundus image showing exudative retinal detachment with underlying mass. C&D OCT image of the corresponding area showing Subretinal fluid and choroidal lesion



To further investigate, MRI Brain and orbit imaging was done. Multiple brain metastases with few of them showing hemorrhagic components within the lesions associated with nodular meningeal enhancement and right ocular choroidal mass with retinal detachment (Figure 3A) was seen in the MRI. CECT chest showed a cavitatory lesion in the posterior basal segment of left lower lobe with subjacent consolidation, pleural effusion and mediastinal lymphadenopathy (Figure 3B). Bronchial biopsy was suggestive of adenocarcinoma lung (poorly differentiated, Figure 3C). Immunohistochemistry was positive for TTF1 and Napsin A and negative for P63, Melan A, S100(Figure 7). He was offered palliative External beam radiotherapy to whole brain by bilateral opposed fields to a dose of 30 Gy over 11 days and chemotherapy which consisted of Inj. Pemetrexed (500 mg/m2) and Inj. Cisplatin (75 mg/m2) . On review after four weeks, there was resolution of retinal detachment with disappearance of choroidal mass without much improvement in his visual acuity (Figure 4) due development of radiation papillopathy in both eyes. Due to the advanced stage of the malignancy with multiple sites of metastasis, patient died after 9 months of diagnosing the disease.

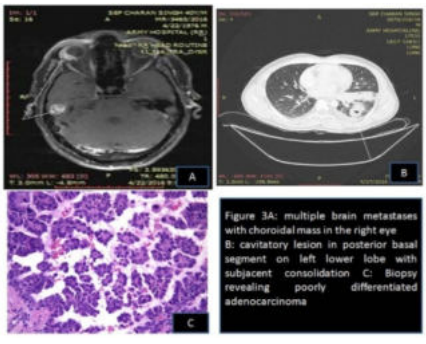


Figure 3A: multiple brain metastases with choroidal mass in the right eye B: cavitatory lesion in posterior basal segment on left lower lobe with subjacent consolidation C: Biopsy revealing poorly differentiated adenocarcinoma

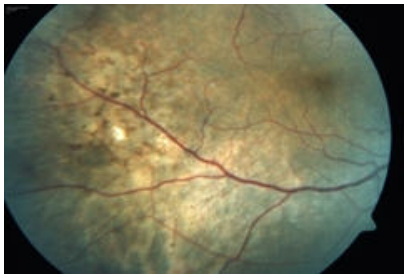


Figure 4: Complete resolution of mass & Fluid

Discussion:

The commonest causes of malignant lesions of the eye are due to metastatic tumours. Breast cancer followed by carcinoma lung constitutes the commonest primary site. As per the study by Shields[1] et al approximately one third of these patients would not have a history of any other focus at the time of ocular diagnosis. These patients commonly present with the symptoms of reduced or blurring of vision. Flashes floaters, and rarely pain are the other ocular manifestations[3]. Yellowish white choroidal lesions, single or multiple in number, unilateral or bilateral, overlying pigmentary alteration with exudative retinal detachment is the commonest ocular finding. The diagnosis is based on the clinical findings which will be further augmented by various imaging modalities like fluorescein angiography, CT Scan, Ultrasound and MRI. Choroidal melanoma especially amelanotic type, various granulomas and benign conditions like choroidal hemangioma should be kept in mind while dealing with these lesions.

Systemic chemotherapy along with radiotherapy must be offered to these patients[5] . External beam radiation, hormone therapy, plaque therapy, resection or combination may be required in some cases. Some of these cases also benefit from injection Bevacizumab either instituted systemically or by intravitreal route. The patients with ocular metastasis usually have a poor prognosis. A multidisciplinary approach is always beneficial in these types of cases.

Conclusion:

Though rare, advanced carcinoma lung can present primarily as a choroidal lesion with reduced visual acuity. High index of suspicion and meticulous work up is required to detect and treat the primary lesion while dealing with a choroidal mass. An early intervention can prevent loss of vision and can improve quality of life, for the remaining period of months in these patients.

Conflicts of interest: None
Financial disclosure: None

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