Case Report:

Choroidal metastasis as initial presentation of squamous cell carcinoma lung in a patient who had undergone treatment for carcinoma hypopharynx

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ABSTRACT

Choroidal metastasis is the most common intraocular malignancy followed by ocular melanoma. This presentation is reported commonly in breast and lung malignancies with multifocal involvement of one eye, or involvement of both eyes. In lung cancer, it is seen in 50-60 year old males with histopathological diagnosis of adenocarcinoma. Here we report the rare occurrence of squamous cell carcinoma lung in 35 year-old female with choroidal metastasis as initial presentation in a patient who had undergone treatment for carcinoma hypopharynx as metachronous second primary.

Key word: *Secondary choroidal neoplasm, Squamous cell carcinoma, Lung, Ophthalmoscopy*

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INTRODUCTION

Most common intraocular malignancy is choroidal metastasis.[1] Multifocal, bilateral involvement is commonly seen. Common reported primaries are from breast in females and lung in males.[2,3] In lung cancer most commonly observed histopathplogical diagnosis is adenocarcinoma. Here we report the rare occurrence of squamous cell carcinoma lung with choroidal metastasis as initial presentation in a known, treated and responded case with carcinoma hypopharynx.

CASE REPORT

A 35-year-old female who was treated for carcinoma hypopharynx, during follow-up period after 1 year presented with pain in left eye associated with blurred vision of 1 month duration in October 2013. Clinical examination, fundoscopy, florescein fundus angiography (FFA), ultrasound-B scan, magnetic resonance imaging (MRI) of the orbits were done. Clinically patient had relative afferent pupillary defect and visual acuity of counting fingers at three metres. Fundoscopy was showing an orange yellow coloured elevated area of retinal detachment with sub retinal exudates. FFA was suggestive of pin-point hyperfluorescence (Figure 1) with late hypofluorescence at the centre of lesion with surrounding area of

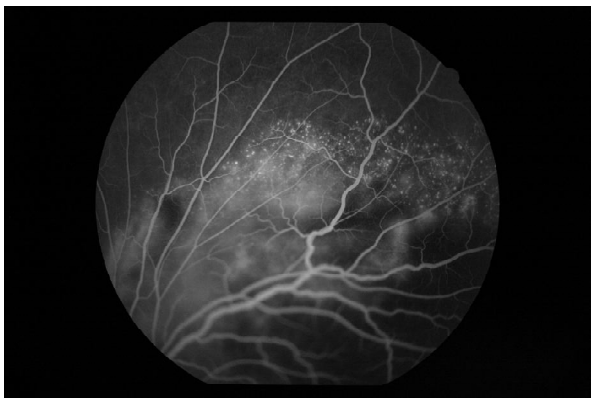

Figure 1: Fluorescein fundus angiography of left eye showing pinpoint late hyperfluorescence in the periphery of lesion

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hyperfluorescence. Then the patient was evaluated with B mode ultrasonography which showed an elevated area with medium to high internal reflectivity with minimal sub retinal fluid in choreoretinal area with no intrinsic tumour vascularity. MRI orbits showed a heterogeneously enhancing focal choreoretinal thickening in superotemporal quadrant of left eye (Figure 2). All the above investigations were suggestive of choroidal metastasis. Initially metastases from hypopharyngeal carcinoma was considered but as it was very rare and post-treatment follow-up investigations for hypopharyngeal carcinoma with indirect laryngoscopy and computed tomography (CT) neck were normal so we did fluorodeoxy glucose positron emission tomography (FDG PET) to detect second malignancy as well as other metastases. The positron emission tomography-computed tomography (PET-CT) was suggestive of metabolically active malignant lesion involving anterior segment of upper lobe of right lung suspicious for second malignancy, metabolically active metastasis in left eye, choroido retinal lesion (Figure 3). Hence as the patient was previously treated and had responded to treatment, presence of a large solitary lesion in lung eroding ribs with central necrosis, primary lung pathology was more likely and patient was evaluated with CT-guided biopsy from right lung lesion which was suggestive of well-differentiated squamous cell carcinoma (Figure 4). IDL scopy did not reveal

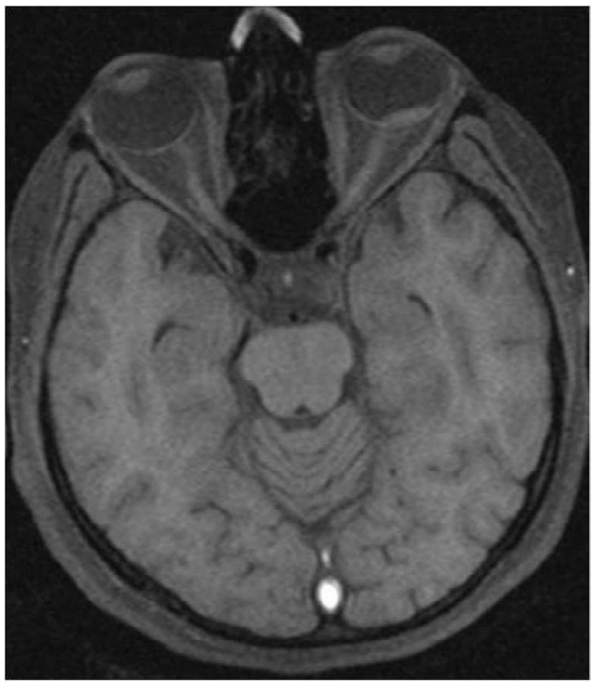

Figure 2: Magnetic resononance imaging orbits T1 - weighted axial section with fat suppression showing a focal choreo retinal thickening lateral to optic nerve head.

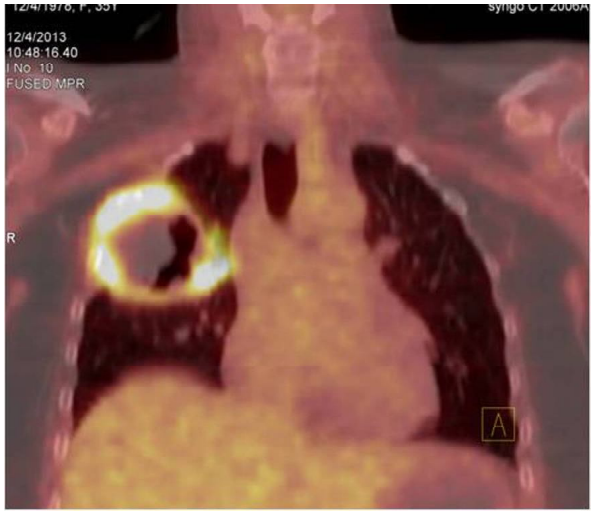

Figure 3: ^{18}F – Fluoro deoxy glucose positron emission tomography-computed tomography showing metabolically active lesion measuring $6.6 \times 5.8 \times 5.8$ cm in size involving anterior segment, upper lobe of right lung with involvement of adjacent pleura, chest wall and destruction of adjacent right second and third ribs with max. SUV of 11.8.
SUV = standardized uptake valve

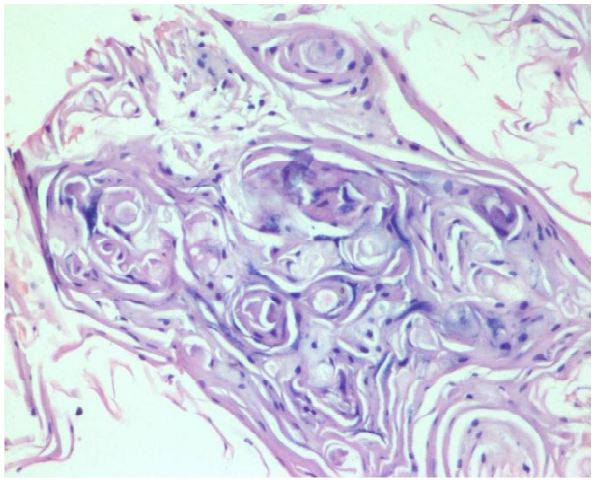

Figure 4: Photomicrograph of the CT-guided lung biopsy specimen showing keratin perals and features suggestive of a well differentiated squamous cell carcinoma (Haematoxylin and eosin, × 400)

a visible growth in hypopharynx. Hence the patient was diagnosed to have choroidal metastasis as initial presentation of squamous cell carcinoma lung occurring as a metachronous second malignancy one year after treatment of hypopharyngeal cancer. After confirmation of metastasis, in view of severe pain patient was treated with palliative radiotherapy to left eye with three dimensional conformal radiotherapy to a dose of 30 gray in 10 fractions at 3 gray per fraction, 5 fractions per week over two weeks. Then patient was referred to medical oncology service for chemotherapy and was planned for palliative chemotherapy with three weekly intravenous inj cisplatin and inj paclitaxel for six cycles. There was significant decrease in pain in left eye and stabilization of vision on post-radiotherapy follow-up.

DISCUSSION

Choroidal metastases are caused by less than 1% of malignancies.[4] Majority of patients with choroidal metastasis with lung cancer as the primary source are males, and are current or ex smokers.[5] Their mean age is 55.1 years and adenocarcinoma is the most common histopathological type.[5] The left eye involvement is more common than right.[5] The lung primary is most commonly located in the left upperlobe and the liver is most common extraocular site involved.[5] But our patient who is 35 years old, had squamous cell carcinoma of right lung with solitary choroidal metastases. Choroidal metastases are typically yellow to orange red in color, have a flat configuration, with subretinal fluid. Choroidal metastases are located between the macula and equator (80%), within the confines of the macula (12%) and anterior to the equator (8%).[6] The highly vascular nature of the choroid makes it a likely site for the haematogenous spread of tumour deposits. Tumour emboli enter the choroid via the internal carotid arteries, the ophthalmic arteries, and the short posterior ciliary arteries.[6] On B-mode ultrasonography choroidal metastases reveal an irregular lumpy contour, irregular internal structure with medium to high internal reflectivity with no internal vascularity.[7] FFA shows diffuse or multifocal hypo fluorescence and hyper fluorescence at the retinal pigment epithelium (RPE) level overlying the lesion (due to the damaging effects of the expanding choroidal tumour on the overlying retinal pigment epithelium), pin-point hyperfluorescent foci at the RPE level, over the surface of the tumour by the late phase (due to microcystic RPE degeneration).[8] If there is evidence of systemic metastatic disease, then treatment of the non-ocular and ocular metastatic tumours consists of chemotherapy, hormone therapy, immunotherapy, multiple-site radiotherapy, or observation.[9] Transpupillary thermotherapy may be used for small, solitary choroidal metastatic tumours with minimal or no sub retinal fluid in selected patients with satisfactory outcomes in terms of tumour control.[9] If there is no evidence of systemic involvement, then whole-eye treatment with chemotherapy, hormone therapy, immuno-therapy, radiotherapy, or enucleation is considered.[9] Radiotherapy is the most commonly used modality as it will provide local control and help to avoid visual loss, pain and morbid enucleation especially in tumors with large size and subretinal fluid.[10] Plaque radiotherapy can be used if tumor is small and located away from macula and optic nerve and in patients refractory to radiotherapy as high dose can be provided.[10] Response can be evaluated 6-8 weeks' post-treatment. Survival and prognosis depends on primary tumour type and stage at the time of presentation.[7] If the patient has visual symptoms, treatment should be offered as soon as possible in order to maintain and, in many cases, improve visual acuity. Timely diagnosis and early treatment

with radiotherapy prevents further visual loss, dissemination and morbid enucleation.

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