

Case Report

Adenocarcinoma of Lung Presenting as Unilateral Blindness: A Case Report

Govind Babu, Ashok S Komaranchath*, T M Suresh, Suresh Babu, and
Mangesh Kamath

Department of Medical Oncology, Kidwai Memorial Institute of Oncology,
Bangalore – 29, India

Abstract

Introduction: Lung cancer is the most common cause of death among cancers. Over 55% have distant metastasis at presentation. Intraocular metastasis is a rare site of spread. It is extremely unusual for lung cancer to present primarily with features of choroidal involvement before any respiratory symptoms are manifest.

Case Report: A 53 year old lady presented with protrusion of the left eye followed by sudden unilateral painless loss of vision one month later. She was diagnosed to have a left retinal detachment due to a choroidal mass in the left eye. Enucleation was done and showed a metastatic carcinoma of unknown primary. Immunohistochemistry was suggestive of adenocarcinoma with primary in the lung. She had a right mid-lobe lesion for which biopsy was attempted but failed. She also had multiple skeletal metastases and small lesions in the liver. Mutation analysis on the enucleation specimen was positive for exon 19 mutation of EGFR gene and she was started on single agent oral gefitinib 250mg daily and bisphosphonates. Reassessment done 3 months showed reduction in the size of the primary lung lesion with resolution of the liver lesions. Skeletal lesions remained the same.

Conclusion: This case of choroidal metastasis presenting with retinal detachment demonstrates a very rare initial presentation of adenocarcinoma of the lung and highlights the need to look for a primary in the lung in cases of choroidal metastasis.

Keywords: Adenocarcinoma lung; Choroidal metastasis; Retinal detachment; EGFR mutation

Academic Editor: Xiaoning Peng, Hunan Normal University School of Medicine, China

Received: February 19, 2015; **Accepted:** March 24, 2015; **Published:** April 20, 2015

Competing Interests: The authors have declared that no competing interests exist.

Consent: We confirm that the patient has given the informed consent for the case report to be published.

Copyright: 2015 Komaranchath A S *et al.* This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

***Correspondence to:** Ashok S Komaranchath, Department of Medical Oncology, Kidwai Memorial Institute of Oncology, Bangalore – 29, India; **Email:** komaranchath@gmail.com

Introduction

Lung Malignancies are the most common cause of death among cancers. This is mainly due to its late presentation and advanced stage at presentation. Over 55% have distant metastasis at presentation. The most common sites of metastasis are to the adrenal glands, bone, brain and liver. Intraocular metastasis is very rare. However the most common intra-ocular malignancies are metastasis from distant primaries and the choroid is the most common site of involvement. Bilateral involvement is seen in up to 40% of cases. In descending order of occurrence, the primary sites of choroidal metastasis are breast, lung, unknown primary, gastrointestinal and pancreas in females. In males, the primary site is usually lung, unknown primary, gastrointestinal and pancreas, prostate, kidney and other rare sources in that order. However, it is very unusual for lung cancer to present with symptoms of choroidal involvement before any respiratory complaints are manifest. We present a case of adenocarcinoma of the lung which presented with sudden unilateral painless loss of vision due to choroidal metastasis.

Case presentation

A 53 year old lady presented with protrusion and swelling of the left eye since 3 months followed by sudden painless loss of vision in the same eye around 2 months back. She gave no history of Diabetes, Hypertension or any history of smoking. She was diagnosed to have a left retinal detachment due to a choroidal mass in the left eye. MRI of the orbit was initially suggestive of a choroid neoplasm, possibly malignant melanoma (Fig.1). She underwent enucleation of the left eye on 16/01/2014 and the initial histopathology report was metastatic deposits of infiltrating carcinoma with unknown primary. A search for the primary ensued and on CT scan, she was found to have a heterogeneously enhancing lesion in the medial segment of middle lobe of right lung abutting the pericardium over the right atrium (Fig.2). There were small but distinct lesions noted in segments 2 and 7 of the liver as well. MRI brain, Upper GI scopy and bilateral mammography were normal. Video bronchoscopy showed external compression of right middle lobe but no endo-bronchial lesion. Immunohistochemistry was done on the enucleation specimen which showed tumour cells positive for TTF-1, CK-7, focally positive for CK20 and negative for HMB45 (Fig.3). This was consistent with a diagnosis of a metastatic adenocarcinoma of choroid with the primary lesion in the lung. CT guided fine needle aspiration of the right lung lesion was attempted twice but failed to obtain adequate tissue for analysis. Liver lesions could not be evaluated further by fine needle aspiration in view of small size. There were no significant lymph node enlargement or any other evidence of metastasis. Since the liver lesions were suggestive of metastasis as per the CT scan, the Stage of the tumour was determined to be cT_{2a}N₀M_{1b}; Stage IV. Mutation analysis was done on the enucleation specimen which showed a mutation (del. E746-A750) in Exon 19 of the EGFR gene. After consultation with the patient, she was started on Gefitinib single agent and monthly bisphosphonates. Reassessment was done 3 months later and CT thorax showed reduction in the size of the primary lung lesion and resolution of the liver lesions. Skeletal metastases persisted. She was clinically asymptomatic.



Figure 1 MRI Brain with sagittal and axial cuts showing choroidal lesion (Red Arrows).

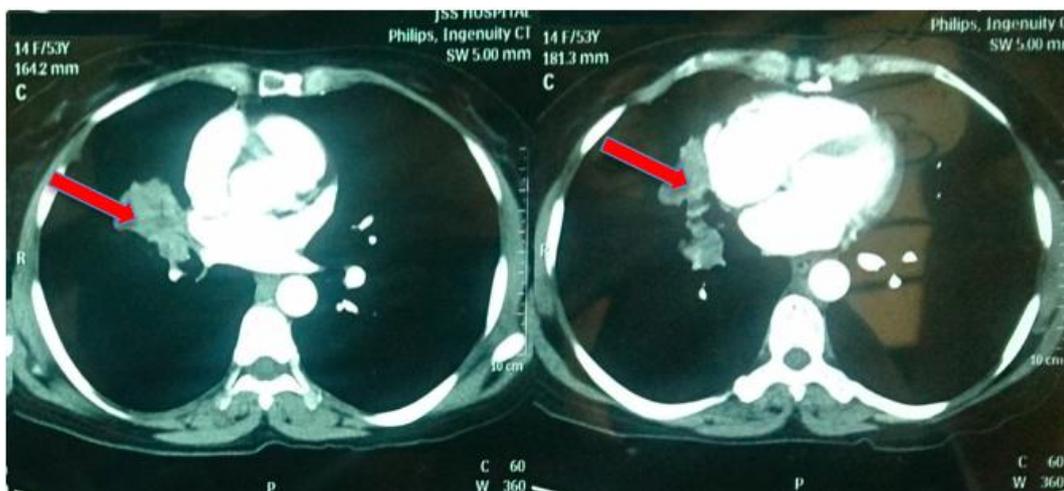


Figure 2 CECT scan of thorax showing primary lesion in the middle lobe of right lung (Red Arrows).

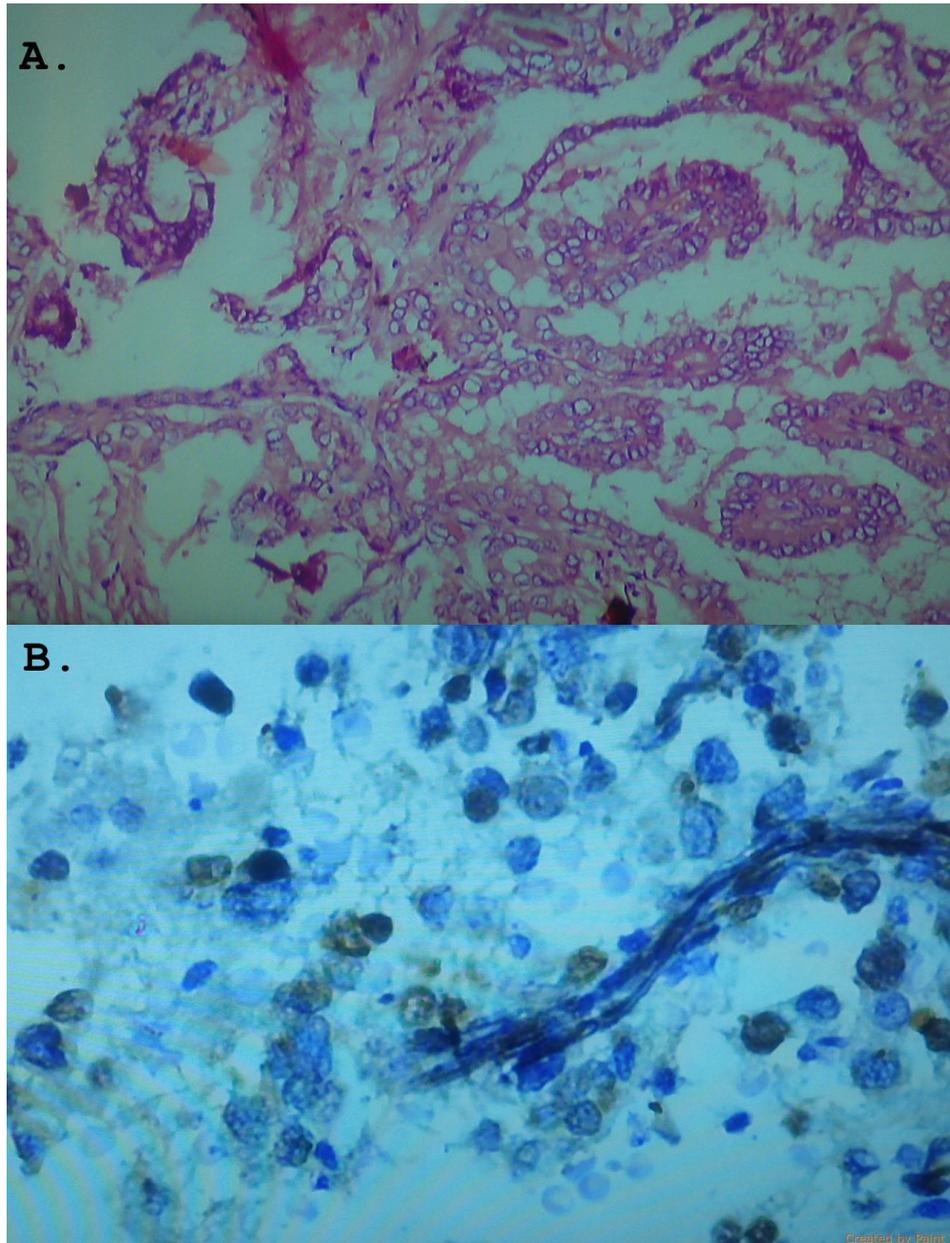


Figure 3 A. HPE showing Metastatic Adenocarcinoma enucleation specimen
B. IHC studies show TTF1 positivity (deep blue) suggestive of a primary in the lung

Discussion

Here, we are reporting a case of adenocarcinoma of the lung in a lady who is a non-smoker and whose initial presentation is that of unilateral sudden painless loss of vision due to metastatic involvement of the choroid. Although choroidal metastasis is not an uncommon site for lung cancers, it is very rare for it to be the first presenting sign. According to Singh *et al.*, only 55 cases of choroidal metastasis as the presenting manifestation of lung cancer have been reported in literature [1]. However, the most common intra-ocular tumours are metastases and the choroid is the most common site for the same [2, 3]. This is thought to be due to the high vascularity of the choroid as compared to other ocular structures [4]. Among

patients with choroidal metastases as the first clinical sign, the primary site is usually the lung (58%) or the breast (28%) [5]. Among women, the primary sites for choroidal metastases are the breast, lung, unknown primary, gastrointestinal and pancreas, and other rare sources. Among men, however, the primary sites are the lung, unknown primary, gastrointestinal and pancreas, prostate, kidney, and other rare sources [2, 3, 6].

Another unusual feature of this case was the presentation with retinal detachment and sudden loss of vision. A review of 70 cases of choroidal metastasis by Stephens and Shields revealed that blurred vision was the presenting complaint in 80% of patients, and pain was noted in 14%, photopsia in 13%, red eye and floaters in 7% and field defects in 3% [2]. Most commonly, the lesions are unilateral, however it may involve both choroids in upto 40% of cases [7]. In upto 22% of patients with choroidal metastasis, there is usually a concurrent diagnosis of central nervous system metastasis as well [8] though in our patient, there were none. Usually, such metastasis occurs in the final stages of the disease when median survival is not more than 6 months and most of the patients already have lung symptoms [9]. However, our patient had absolutely no respiratory symptoms neither at presentation nor during subsequent work-up.

Our patient is currently doing well with no symptoms and is in partial remission with single agent gefitinib therapy.

Conclusions

This case report of choroidal metastasis presenting as loss of vision and retinal detachment demonstrates a very rare initial presentation of adenocarcinoma of the lung and highlights the need to look for a primary in the breast or lung in cases of choroidal metastasis.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

References

1. Singh N, Kulkarni P, Aggarwal AN, Mittal BR, Gupta N, Behera D, et al. Choroidal metastasis as a presenting manifestation of lung cancer: a report of 3 cases and systematic review of the literature. *Medicine (Baltimore)*. 2012, 91:179-194
2. Stephens RF, Shields JA. Diagnosis and management of cancer metastatic to the uvea: a study of 70 cases. *Ophthalmol*. 1979, 86:1336-1349
3. Ferry AP, Font RL. Carcinoma metastatic to eye and orbit. a clinicopathologic study of 227 cases. *Arch Ophthalmol*. 1974, 92:276-286
4. Ascaso FJ, Castillo JM, Garcia FJ, Cristóbal JA, Fuertes A, Artal A. Bilateral Choroidal Metastases Revealing an Advanced Non-Small Cell Lung Cancer. *Ann Thorac Surg*. 2009, 88:1013-1015
5. Kreusel KH, Bechrakis N, Wiegel T. Clinical characteristics of choroidal metastasis. *Ophthalmol*. 2003, 100(8):618-622
6. Shields CL, Shields JA, Gross NE, Schwartz GP, Lally SE. Survey of 520 eyes with uveal metastases. *Ophthalmol*. 1997, 104:1265-1276
7. Shields JA. Diagnosis and Management of Intraocular Tumors. St Louis: Mosby; 1983
8. Koçak Z, Tabakoğlu E, Benian O, Bayir G, Unlü E, Uzal C. Bilateral choroidal metastases as an initial manifestation of small-cell carcinoma of the lung. *Tuberk Toraks*. 2006, 54(1):61-64
9. JA Fernando, Fernandez CF, Garcia RA. Optical Coherence Tomography. Characteristics of Choroidal Metastasis. *Ophthalmol*. 2005, 122:1612-1619