

## CASE REPORT

# Masquerade Syndrome: An Ocular Involvement of Lung Cancer

UMI KALTHUM MN, WAN HASLINA WAH

*Department of Ophthalmology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Jalan Yaacob Latiff, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia.*

## ABSTRAK

*Kami melaporkan kes seorang lelaki berusia 37 tahun yang merupakan seorang perokok, datang dengan kehilangan medan penglihatan sebelah atas mata kanan secara tiba-tiba tanpa kesakitan. Beliau juga melaporkan episod batuk kering yang tidak respon pada antibiotik dan juga anti-tuberkulosis. Penglihatan beliau hanya setakat mengira jari. Terdapat rekangan retina 'bullous' pada pemeriksaan. Pengimejan radiologi menunjukkan legapan pada peparu, otak dan mata kanan. Bronkoskopi dan biopsi mengesahkan kanser peparu. Kes ini menggambarkan kanser peparu yang 'bersembunyi' di sebalik rekangan retina. Ia juga menekankan kepentingan untuk melihat kanser peparu sebagai diagnosa tambahan bagi kes disyaki tuberkulosis di kalangan perokok.*

*Kata kunci: perokok, rekangan retina, kanser peparu, sindrom 'masquerade'*

## ABSTRACT

We report a case of a 37-year-old smoker who presented with painless and sudden onset of loss of upper field vision of the right eye, associated with one month history of dry cough which was unresponsive to antibiotic and subsequent anti-tuberculosis therapy. Visual acuity at presentation was counting finger. There was bullous retinal detachment on examination. Radiological imaging revealed multiple lung opacities, involving the brain and the right orbit. Bronchoscopy and biopsy confirmed the diagnosis of adenocarcinoma of the lung. This case illustrates masquerade syndrome of which a lung carcinoma harbours behind a seemingly innocent retinal detachment. It also highlights the importance of entertaining lung carcinoma as a differential diagnosis in suspected tuberculosis among heavy smokers.

Keywords: smoker, retinal detachment, adenocarcinoma, masquerade syndrome

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**Address for correspondence and reprint requests:** Dr. Umi Kalthum Md Noh, Department of Ophthalmology, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Center, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia. Tel: 603-91455981 Fax: 603- 91456673 Email: [umi\\_fizul@yahoo.com](mailto:umi_fizul@yahoo.com)

## INTRODUCTION

Retinal detachment (RD) may be of rhegmatogenous, tractional or exudative types. Exudative RD has a distinct features of 'bullous' appearance, compared to the corrugated retinal detachment seen in the rhegmatogenous type. Causes of exudative RD include posterior uveitis, central serous choroidoretinopathy and hypertensive retinopathy (Gass & Little 1995). Smokers are at risk of developing lung carcinoma. Pulmonary tuberculosis, and adenocarcinoma of the lung should be foremost in the list of differentials in patients with miliary opacities on X-ray. Exudative RD secondary to malignant uveal melanoma has previously been reported (Kivella et al. 2001)

## CASE REPORT

A 37-year-old policeman, who heavily smoked presented to eye clinic with complaints of sudden and progressive deterioration of the upper half of his right eye visual field. There were no associated floaters or flashes of light, and he denied preceding ocular trauma.

A month previously, he complained of dry cough with intermittent fever of three weeks duration. X-ray at that time revealed an ill-defined opacity at right midzone with military nodules at both lung fields (Figure 1). He also admitted to significant weight loss recently. Subsequently, the case was treated as pneumonia and started on oral augmentin 625 mg bidaily for one week. His symptoms did not improve despite completing the antibiotic

regime. Respiratory consults advised anti TB therapy on the basis of positive Mantoux test, although Zhiel-Nielson stain and sputum culture were negative. The condition remained the same and he complained of further three kilogram of weight loss within a month, associated with lethargy. Within the same week, the gentleman presented with the ocular symptoms.

On examination, his visual acuity was counting finger on the affected side, with marked relative afferent pupillary defect. Anterior segment examinations revealed bullous inferior retinal detachment apparent without funduscopy, raising suspicion of masquerade syndrome (Figure 2). No retinal break was discerned despite careful examination. The contralateral eye was normal.

Another repeat X-ray showed new findings of generalized nodules in both lung fields, with right hilar and paratracheal lymphadenopathy. Computed tomography of CT thorax showed a large mass at the right hilum compressing the upper bronchus, and causing secondary collapse of the right upper lobe, with multiple nodules throughout both lung parenchyma. There were also bilateral hilar and mediastinal lymphadenopathies with extensive metastases to both lungs, adrenal glands, liver, and brain, and right choroid (Figure 2).

Bronchoscopy and biopsy confirmed the diagnosis of poorly differentiated adenocarcinoma of the lung, which was inoperable due to distant metastases. He was planned for combination of radiotherapy and chemotherapy. Unfortunately, patient

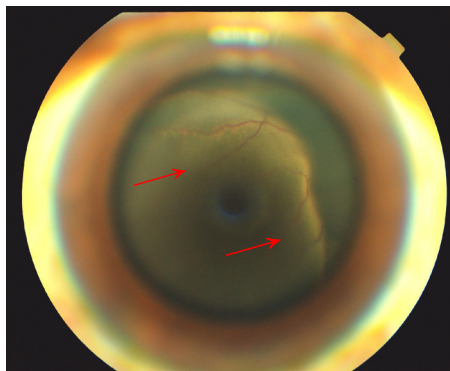


Figure 1: Anterior segment photo of dilated right eye shows extensive bullous retinal detachment.

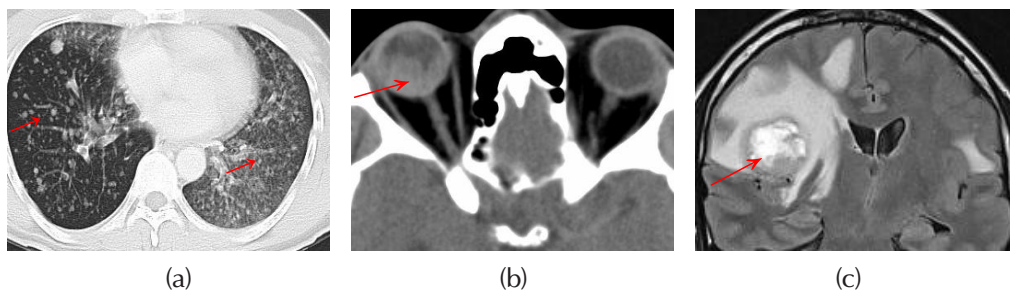


Figure 2: CT scans showing multiple nodules throughout lung parenchyma (a), right posterior globe thickening with retinal detachment (b), lesions of brain on MRI (c).

passed away within two months of his presentation.

## DISCUSSION

This case illustrates well the masquerade syndrome, whence an advance stage of lung cancer presented with retinal detachment, signifying distant metastases. In this case, the recognition of symptoms and sign may not be able to save the right eye vision, but it is certainly life-saving for the patient.

The term 'masquerade' is used to describe uveitides which are not immune mediated in the unusual way, but which have an underlying primary cause (Zamiri et al. 1997). In

this case, metastatic tumour spread from primary small cell lung carcinoma to the right globe caused exudative retinal detachment and minimal vitritis in the eye, mimicking inflammation. Ocular secondaries usually originate from renal and lung carcinoma, (Zamiri et al. 1997) as illustrated in this case. Therefore, our threshold of suspicions for malignancies should be high in atypical ocular presentations of retinal detachment without obvious retinal tear.

The associations between smoking and cancer have always been postulated, yet the exact pathomechanism is difficult to delineate. Yang and colleagues suggest that smokers

who develop adenocarcinoma of the lung are as susceptible to the tobacco-containing carcinogens as with the small cell and squamous cell carcinoma (Yang et al. 2002). Furthermore, the same study concluded that the association between adenocarcinoma of the lung and tobacco smoking is stronger than was previously thought (Yang et al. 2002).

The thickening on the posterior aspect of the right globe was highly likely due to choroidal metastases (Skarin 1999). A reported a case of metastatic non-small cell carcinoma that initially presented as choroidal tumour, (Skarin 1999) thus raising a suspicion of primary carcinoma elsewhere. The diagnosis of ocular metastases is based primarily on clinical findings supplemented by imaging studies. A study found that choroids was the sixth most common site for metastatic lung carcinoma, following brain, bone, liver adrenals and lung itself (Kreusel et al. 2002). Although choroidal metastases is common in advanced lung cancer, (Kreusel et al. 2002) screening for at-risk individuals may have no great benefit due to short survival of affected individuals.

Our patient was given a combination of radiotherapy and chemotherapy, to induce tumour regression. Treated secondary choroidal tumors showed complete regression within five months of treatment in 84% of cases, while serous retinal detachment resolved in 82% percent of treated metastases within 3.8 months after treatment (Tsina et al. 2005). In this study, proton beam irradiation led to complications such as keratitis, cataract, radiation papillopathy

and radiation maculopathy in 56 % of cases (Tsina et al. 2005). Although this percentage was quite high, proton beam irradiation allows retention of globe, achieves a high probability of local tumour control and help to avoid pain (Tsina et al. 2005).

Reduce visual acuity, although unilateral may have a major impact in one's life, especially in patients who are generally in poor physical condition such as in cancer patients. In a study to look at the safety and efficacy of high dose external beam radiation therapy in patients with choroidal metastases, complete remission of choroidal tumour was achieved in 72% receiving more than 35.5 Gy and 33% of patients who received less than that (Rosset et al. 1998). Visual improvements was also significantly better in the eyes receiving more than 35.5 Gy of radiation dose (Rosset et al. 1998). Although the dosage was considered high, the improvement in vision following regression of choroidal tumour has a major impact in this group of patients who already have a fatal prognosis.

Our patient received radiation to the whole brain including the both orbits. Bilateral orbits radiation is recommended to treat subclinical metastases not seen in imaging modalities, and to prevent occurrence of metachoronus metastases (Rosset et al. 1998).

## CONCLUSION

Despite the increasing number of pulmonary tuberculosis cases, lung cancer should be foremost in mind, especially in individuals who have

history of heavy cigarette smoking. The public should also be made more aware of the devastating complications and carcinogenic effect of smoking. Effects of smoking on the health of the smokers, the family and family economy, and the cost of treatment of various cancers attributed to smoking must be emphasized.

## REFERENCES

- Gass, J.D., Little, H. 1995. Bilateral bullous exudative retinal detachment complicating idiopathic central serous chorioretinopathy during systemic corticosteroid therapy. *Ophthalmology* 102(5): 737-747.
- Kivella, T., Eskelin, S., Makitie, T., Summanen, P. 2001. Exudative retinal detachment from malignant uveal melanoma: predictors and prognostic significance. *Invest Ophthalmol Vis Sci* 42(9): 2085-2093.
- Kreusel, K.M., Wiegel, T., Stange, M., Bornfeld, N., Hinkelbein, W., Foerster, M.H. 2002. Choroidal metastasis in disseminated lung cancer: frequency and risk factors. *Am J Ophthalmol* 134(3): 445- 447.
- Rosset, A., Zografos, L., Coucke, P., Monney, M., Mirimanoff, R.O. 1998. Radiotherapy of choroidal metastases. *Radiother Oncol* 46(3): 263- 238.
- Skarin, A. 1999. Diagnosis in oncology: choroidal metastases. *J Clin Oncol* 17(10): 3356- 9.
- Tsina, E.K., Lane, A.M., Zacks, D.N., Munzenrider, J.E., Collier, J.M., Gragoudas, E.S. 2005. Treatment of metastatic tumors of the choroid with proton beam irradiation. *Ophthalmology* 112(2): 337- 343.
- Yang, P., Cerhan, J.R., Vierkant, R.A., Olson, J.E., Vachon, C.M., Limburg, P.J., Parker, A.S., Anderson, K.E., Sellers, T.A. 2002. Adenocarcinoma of the lung is strongly associated with cigarette smoking: Further evidence from prospective study of women. *Am J Epidemiol* 156(12): 1114- 1122.
- Zamiri, P., Boyd, S., Lightman, S. 1997. Uveitis in the elderly- is it easy to identify the masquerade? *Br J Ophthalmol* 81(10): 827- 831.