

Bilateral Simultaneous Central Serous Retinopathy As A Presenting Sign Of Metastatic Lung Adenocarcinoma

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Citation

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Abstract

Aims/Background

We present an unusual early manifestation of metastatic lung adenocarcinoma. As the ophthalmic symptoms and signs preceded the diagnosis of the tumor, it is important for the general ophthalmologist to be alert and investigate accordingly.

Methods

A 54 year old lady from Ghana presented with a 2 week history of bilateral blurred vision. After ophthalmic examination the diagnosis of bilateral central serous chorioretinopathy was made and further investigations were requested.

Results

B-scan ultrasonography, fluorescein and indocyanine green angiography, and optical coherence tomography were performed. The results were consisted with bilateral choroidal metastases. She was referred to physicians for systemic work up. A computerized tomography of chest and bronchoscopy/lavage revealed a lung adenocarcinoma. Metastases were found in the liver and brain.

Conclusions

This case highlights the potential for choroidal metastases to appear like central serous retinopathy, underscoring the need for careful history taking and appropriate investigations.

CASE REPORT

A 54 year old Ghanaian lady presented to our casualty department with a two month history of intermittent bilateral ocular pain and a two week history of blurred vision.

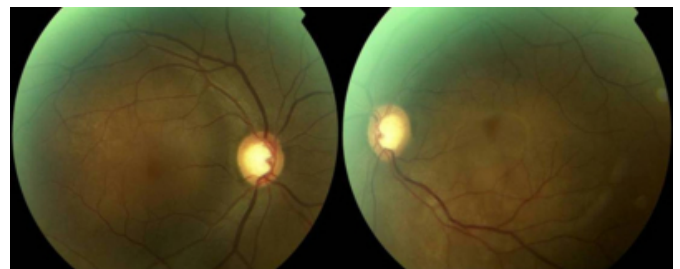
Her ocular history revealed primary open angle glaucoma which had been successfully treated with g Betaxolol bd in both eyes for 13 years.

Her medical history was unremarkable and she was making occasional use of Paracetamol for intermittent arthralgias.

Her best corrected visual acuities (BCVA) were 6/36OD, 6/24OS, with clear optical media, normal intraocular pressures (IOPs) and no sign of intraocular inflammation. Fundoscopy (figure 1), showed a large collection of serous fluid under both maculae with inferior gravitation, and absence of retinal tears in the periphery.

Figure 1

Figure 1: Colour photographs of Right and Left fundi showing bilateral central collection of clear subretinal fluid associated with RPE changes at its borders



The provisional diagnosis of bilateral central serous retinopathy (CSR) was made and the patient was referred to our Medical Retina clinic.

When reviewed, one month later she complained of visual deterioration, headaches and intermittent ocular pain. There

was no restriction of gaze, no diplopia and no exacerbation of pain with eye movements.

On further questioning and systems review she admitted having mild breathing difficulty and a backache for 4-5 months, and malaise for 1 year. Clinically she still had large bilateral CSR overlying suspiciously raised choroids.

Complete fundus imaging including photographs, fluorescein (FFA) and indocyanine green (ICG) angiograms, optical coherence tomography (OCT) and b-scan ultrasonography were performed. (Fig 2-4)

Figure 2

Figure 2: Red free and fluorescein angiogram of Right eye (above) and Left eye (below). There is bilateral, multiple, pinpoint late venous phase leakage, RPE mottling, and subretinal collection of dye.

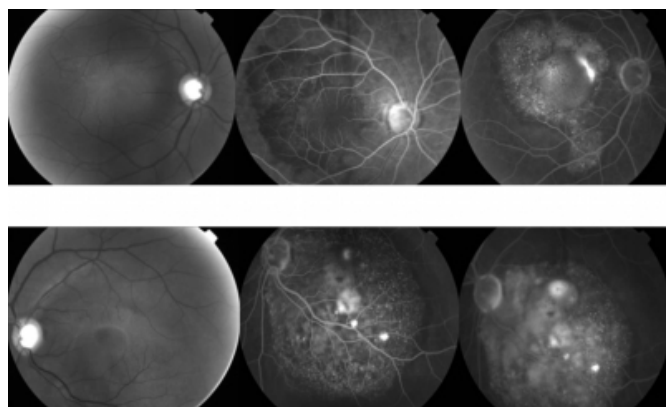
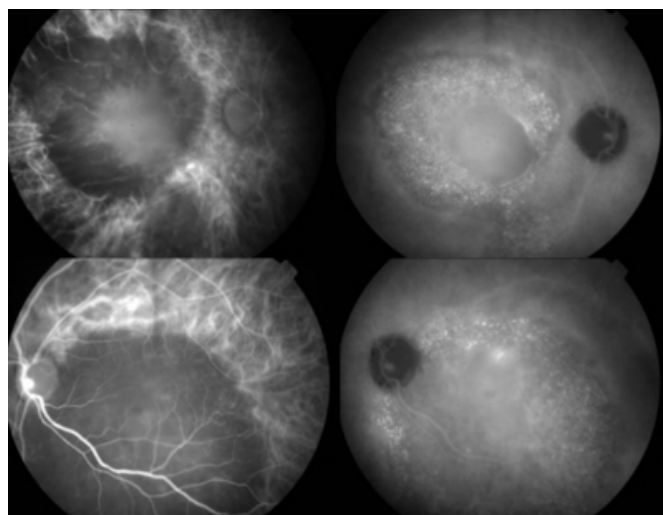


Figure 3

Figure 3: Indocyanine green angiogram of right (above) and left eye (below). There is bilateral early hypofluorescence due to a masking effect followed by late RPE staining and leakage. There are no obvious signs of choroidal inflammatory lesions



Targeted blood tests for inflammatory and infectious causes were ordered and the results are shown in Table1. She was also referred to the physicians for a Computerised tomography (CT scan) of her brain and orbits, and for respiratory assessment. The results of imaging confirmed symmetric pathology in the macular areas with presence of serous subretinal and sub-RPE fluid. There were signs of diffuse macular RPE dysfunction without choroidal neovascularisation. Retinal and choroidal inflammations were also excluded.

Figure 4

Figure 4: OCT of right eye (left) and left eye (right). There is bilateral collection of subretinal fluid overlying and area of retinal pigment epithelial detachment.

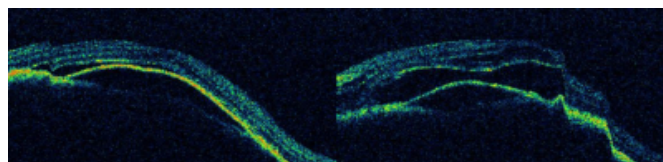


Figure 5

Table 1: Laboratory investigations

| Laboratory tests | |
|--------------------------------|---|
| FBC | RBC, Hb, PLT: normal WBC: 11.8 (↑neutrophils) |
| ESR | 69 |
| CRP | 54mg/L (0-4) |
| Urea, creatinine, electrolytes | Normal |
| Glucose | 4.4mmol/L |
| Treponemal Abs | Negative |
| ACE | 42u/L (27-82) |

B-scan revealed bilateral solid choroidal masses (7.2 mm base x 2.2 mm apex) with intrinsic circulation and overlying CSR. CT scan of brain and orbits showed non specific scleral thickening and multiple small brain deposits without cerebral oedema.

Figure 6

Figure 5: B-scan ultrasound of the right (left), and left (right) eyes. There is a solid mass at the posterior pole with internal blood flow and overlying serous detachment. The possibility of malignancy or granuloma was raised. There was a similar and symmetric lesion in the fellow eye.



The physicians proceed to chest and abdominal CT scans which showed a left lower lobe mass, diffuse bilateral interstitial nodules, mediastinal lymphadenopathy and liver deposits. That was consistent with lung carcinoma with pulmonary and distal metastases. Coexisting interstitial lung disease such as sarcoidosis was also a possibility. Histology after bronchial lavage established the diagnosis of stage 4 adenocarcinoma of the lung.

The lesions and the CSR subsided with chemotherapy but the vision remained poor in both eyes at the level of 6/60 OD and 2/60 OS.

DISCUSSION

Uveal metastasis is the commonest intraocular malignancy

(₁) and patients usually present with ophthalmic complaints such as decreased vision, pain, visual field loss, diplopia and rarely exophthalmos (₂). In a third of them the primary site is not known whereas a quarter of them will have brain metastases as well (_{1,3}).

Breast cancer accounts for most metastatic choroidal lesions (around 50%), however, in patients with no known primary site, undiagnosed lung cancer is the most likely primary tumour. The median survival after diagnosis of a choroidal metastasis is 7-18 months (_{4,5,6,7,8,9}).

Bilateral peripheral choroidal metastases due to lung adenocarcinoma has been described (₁₀). The unusual element in our case is the simultaneous bilateral CSR overlying macular metastases as the presenting feature.

Our patient never smoked and never used topical or systemic steroids and she had no coexisting optic disc pits.

Inflammatory, vascular and infectious causes of CSR were excluded by appropriate investigations and a definite histological diagnosis and staging was made by the physicians. She received chemotherapy and palliative radiotherapy by the oncologists, which resolved the CSR but didn't improve the visual acuity.

CONCLUSION

To the authors knowledge this is the first case report of simultaneous bilateral CSR associated with choroidal metastases secondary to lung adenocarcinoma.

This case highlights the potential for choroidal metastases to appear like central serous retinopathy, underscoring the need for careful history taking and appropriate investigations.

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