Photo Essay

Morphological features of choroidal metastases: An OCT analysis

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The morphological characteristics and retinal changes of chroidal metastases using Spectral Domain OCT are described in a case with primary lung adenocarcinoma and secondary choroidal involvement.

Key words: Choroidal metastases, lung adenocarcinoma, Spectral Domain OCT

Access this article online

Website: www.ijo.in

DOI: 10.4103/0301-4738.121148

Quick Response Code:

Choroidal metastasis from primary carcinoma are the most frequent intraocular neoplasiae.[1,2] Lung in male and breast in female are the most common primary cancer of the choroidal metastasis.[3] Recently, the Spectral Domain OCT (SD-OCT) has been introduced for the observation of retinal changes associated.[4,5]

A 43-year-old man with bilateral visual reduction and metamorphopsiae was admitted reporting a primary lung adenocarcinoma diagnosed four month before with secondary lesions involving brain, liver, adrenal glands, and kidney with kidney failure. Fundus examination revealed 4 raised rounded, yellowish, and variable-sized lesions in the right eye (RE) [Fig. 1a] and a single lesion in the left eye (LE) [Fig. 1b] consisting with choroidal metastases. Ultrasonography showed lesions with moderate internal reflectivity and irregular structure with no vascularization [Fig. 1c]. The biggest lesion in RE was 2.0 mm × 2.3 mm, 1.7 mm × 2.2 mm in LE. Spectralis OCT (Heidelberg Engineering, Germany) revealed: (a) convex retinal profile, (b) multiple sub-retinal low-reflective areas consisting with serous neurosensory detachments, (c) displacement of the photoreceptor layer by sub-retinal fluid,

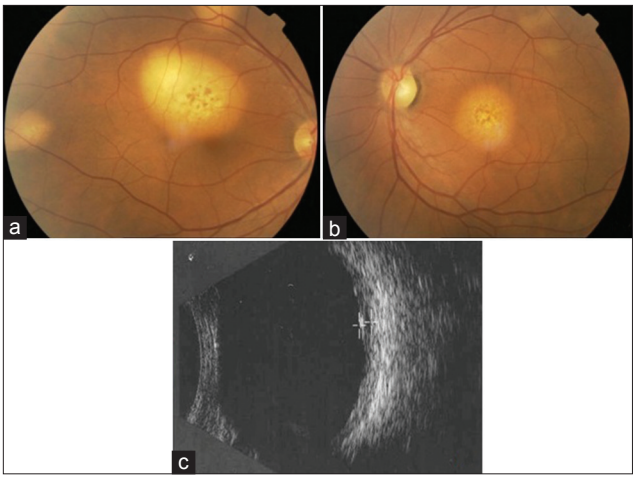

Figure 1: (a) Four raised rounded, yellowish, and variable-sized lesions in the RE, (b) One single lesion in the LE, (c) Right eye ultrasonography: Perimacular lesion with moderate internal reflectivity and irregular structure

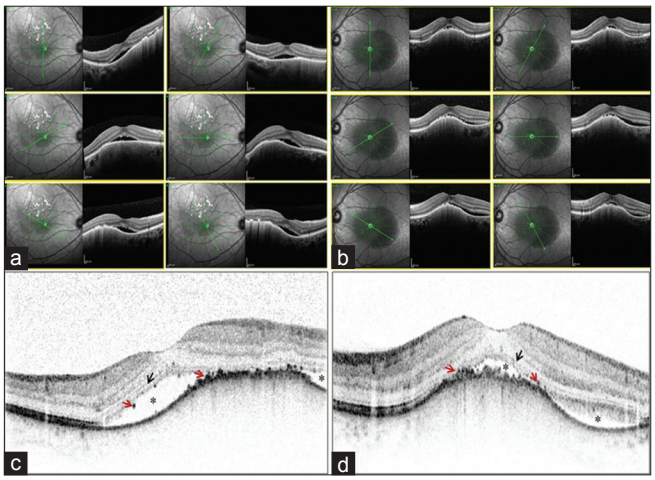

Figure 2: (a, b) Spectralis OCT radial scans crossing the macula in the right and lef eye. C, D) Details showing the following findings: (a) convex retinal profile, (b) multiple subretinal low-reflective areas consisting with serous neurosensory detachments (asterisks), (c) displacement of the photoreceptor layer by subretinal fluid (black arrows), (d) change of the inner retinal layers structure with hyperreflective irregular spots on the RPE layer and under the neurosensory detachment (red arrows), (e) thickening of RPE-choriocapillaris complex, (f) increased macular thickness in both eyes

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Manuscript received: 16.03.13; Revision accepted: 09.09.13

(d) change of inner retinal layers structure with hyper-reflective irregular spots on the Retinal Pigment Epithelium (RPE) and under the neurosensory detachment, (e) thickening of RPE-choriocapillaris complex, (f) increased macular thickness in both eyes (400 μm in the RE and 290 μm in the LE) [Fig. 2a-d]. Sub-retinal fluid might be secondary to RPE breaking and may depend on duration and aggressiveness of choroidal lesion. Hyper-reflective dots observed may correspond to areas of damaged RPE or neuroepithelium with accumulation of macrophages retaining lipofuscin or melanin granules. In conclusion, SD-OCT allowed the evaluation in detail of the retinal changes secondary to choroidal metastases, although the ultrasonography still remains the most appropriate tool to measure the lesion size. Further investigations with histopathological correlation will be necessary to confirm our results.

References

1. Ishida T, Ohno-Matsui K, Kaneko Y, Tobita H, Hayashi K, Shimada N, *et al*. Autofluorescence of metastatic choroidal tumor. Int Ophthalmol 2009;29:309-13.
2. Camarillo Gómez C, Sánchez Ronco I, Encinas J. Choroidal metastases. An Sist Sanit Navar 2008;31:127-34.
3. Ascaso FJ, Castillo JM, García FJ, Cristóbal JA, Fuertes A, Artal A. Bilateral choroidal metastases revealing an advanced non-small cell lung cancer. Ann Thorac Surg 2009;88:1013-5.
4. Berman EL, Eade TN, Shields CL, Shields JA, Ehya H, Feigenberg SJ, *et al*. Choroidal metastasis from carcinoid tumour: Diagnosis by fine-needle biopsy and response to radiotherapy. Australas Radiol 2007;51:398-402.
5. Arevalo JF, Fernandez CF, Garcia RA. Optical Coherence Tomography Characteristics of Choroidal Metastasis. Ophthalmology 2005;112:1612-9.

Cite this article as: Iannetti L, Zito R, Tortorella P. Morphological features of choroidal metastases: An OCT analysis. Indian J Ophthalmol 2013;61:663-4.

Source of Support: Nil. **Conflict of Interest:** None declared.