

Multicolor imaging of optic disc melanocytoma

Arpitha Pereira, Sherina Thomas,
Naresh Kumar Yadav, Ramesh Venkatesh

Key words: Color fundus photography, multicolor imaging, optic nerve head melanocytoma

A 52-year-old asymptomatic female presented to the retina clinic with a corrected visual acuity of 6/6, N6 in both eyes.

Anterior segment examination was normal. Biomicroscopic examination of the left fundus revealed an elevated, highly pigmented, brownish-black mass lesion over the optic disc, extending to the adjacent retina and choroid inferiorly, with feathery edges. The rest of the fundus was normal [Fig. 1]. A diagnosis of optic disc melanocytoma (ODMC) with no secondary complications was made.

The lesion was documented on color fundus photograph (CFP) with Topcon TRC 50 Dx. Multicolor (MC) and spectral-domain optical coherence tomography (SD-OCT) images were acquired on Spectralis HRA-OCT (Heidelberg Engineering, Germany) [Figs. 1 and 2]. The area of the ODMC on CFP and multicolor image (MI) was measured after exporting the images to an external ImageJ software (version 1.51) which was 5.21 and 3.58

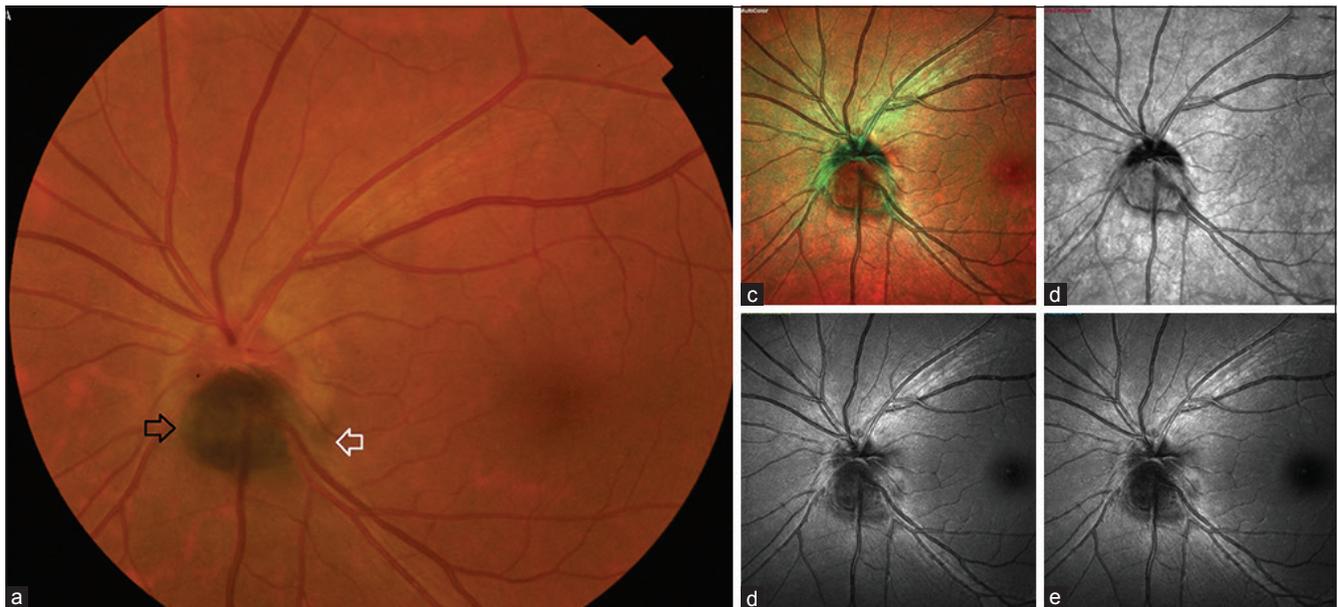


Figure 1: Color fundus image and multicolor imaging demonstrating the optic disc melanocytoma. (a) Conventional color fundus image of the left eye showing an elevated, brownish-black mass measuring approximately 1.5×1.5 DD in size over the optic nerve head and extending into the adjacent retina inferiorly (black arrow). The rest of the fundus and retinal vessels appear normal. The margins of the tumor appear feathery (white arrow). (b) Multicolor image showing the optic disc melanocytoma as a well-defined and well-delineated reddish-brown mass occupying the inferior portion of the optic nerve head. (c) Infrared reflectance image showing the tumor as a white hyper reflective lesion sitting over the dark optic nerve head. (d and e) On the green and blue reflectance images, the tumor is not well-appreciated

Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_1954_19

Department of Retina and Vitreous, Narayana Nethralaya, Bengaluru, Karnataka, India

Correspondence to: Dr. Ramesh Venkatesh, Narayana Nethralaya, Department of Retina and Vitreous, #121/C, 1st R Block, Chord Road, Rajaji Nagar, Bengaluru - 560 010, Karnataka, India. E-mail: vramesh80@yahoo.com

Received: 24-Oct-2019

Revision: 06-Nov-2019

Accepted: 13-Nov-2019

Published: 22-Nov-2019

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

Cite this article as: Pereira A, Thomas S, Yadav NK, Venkatesh R. Multicolor imaging of optic disc melanocytoma. Indian J Ophthalmol 2019;67:2056-7.

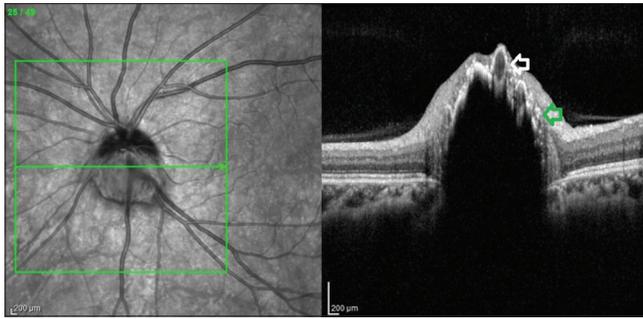


Figure 2: Spectral-domain optical coherence tomography (SD-OCT) passing the optic disc melanocytoma lesion. SD-OCT horizontal line raster imaging of the mass. The mass is seen as a thumb-like lesion overlying the optic disc with a hyperreflective surface followed by a dense optical shadow. Superficial oval structures seen on the vitreal side of the mass is due to the scan cutting through the retinal vessels (white arrow). Note that the choroidal and outer retinal architecture are well-maintained. OCT image showing scattered hyperreflective dots within the mass (green arrow). The retinal nerve fiber layer appears thickened. The junction between the mass and the overlying retinal layers is clearly visible

cm², respectively [Fig. 3]. The patient was explained about the pathology and was asked to follow-up after 6 months.

Patients with ODMC are usually asymptomatic; however, visual loss and malignant transformation can occur in rare situations.^[1-3] While CFP with conventional white flash has been used traditionally to document ODMC, MI could serve as an accessory tool.

The lesion appeared reddish-brown on MI and more well-delineated compared with CFP; possibly due to melanin content within the melanocytic cells in ODMC. Light in the infrared spectrum is poorly absorbed by melanin.^[4] This allows melanin-containing lesions to be seen better on the infrared reflectance and multicolor images compared with the blue and green reflectance images. We also found the lesion size was approximately 30% lesser on MC when compared with CFP, similar to what Muftuoglu *et al.* have reported.^[5] This could be due to the variable melanin content within the melanocytes in ODMC. Thus, to conclude, CFP appears to be superior to MI in documenting and noting progression to malignancy in ODMC.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his

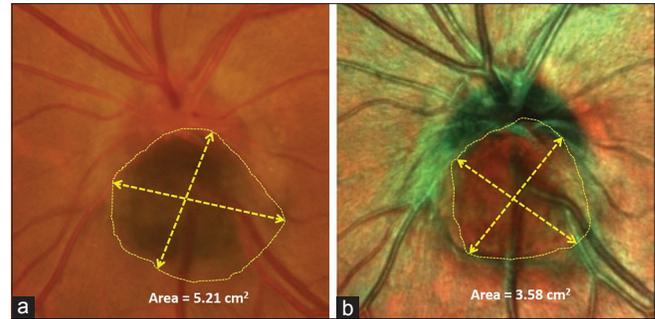


Figure 3: Comparison of the ODMC lesion size between the conventional color fundus photograph and multicolor images. (a and b) Measurement of the tumor on conventional color fundus photograph and multicolor image showing the reduced area of the lesion noted on the multicolor image

consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Agarwal S, Shanmugam MP, Gopal L, Krishnakumar S, Biswas J. Necrotic melanocytoma of the optic disk with central retinal vascular obstruction. *Retina (Philadelphia, Pa)* 2005;25:364-7.
2. Rishi P, Venkatesh R. Central retinal artery occlusion secondary to optic disk melanocytoma. *Retin Cases Brief Rep* 2012;6:212-5.
3. Meyer D, Ge J, Blinder KJ, Sinard J, Xu S. Malignant transformation of an optic disk melanocytoma. *Am J Ophthalmol* 1999;127:710-4.
4. Song W, Zhang L, Ness S, Yi J. Wavelength-dependent optical properties of melanosomes in retinal pigmented epithelium and their changes with melanin bleaching: A numerical study. *Biomed Opt Expr* 2017;8:3966.
5. Muftuoglu IK, Gaber R, Bartsch D-U, Meshi A, Goldbaum M, Freeman WR. Comparison of conventional color fundus photography and multicolor imaging in choroidal or retinal lesions. *Graefes Arch Clin Exp Ophthalmol* 2018;256:643-9.