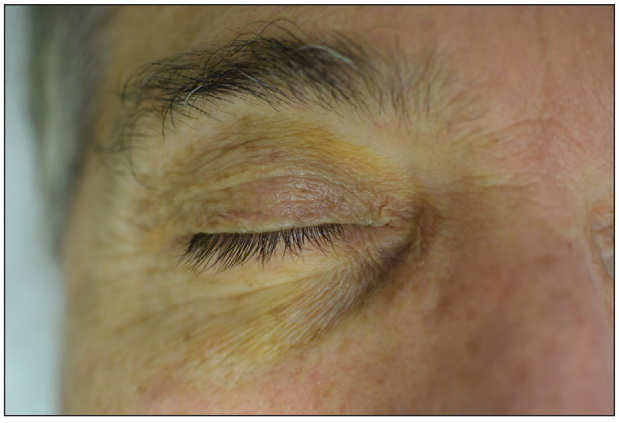
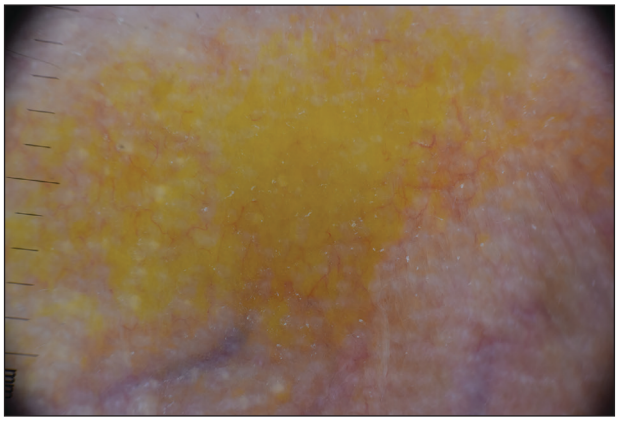
Periorbital Orange Spots

Kelly McCoy, MD; Suraj Venna, MD





A 63-year-old White man with a history of melanoma presented to our dermatology clinic for evaluation of gradually worsening yellow discoloration around the eyes of 2 years' duration. Physical examination revealed periorbital yellow-orange patches (top). The discolorations were nonelevated and nonpalpable. Dermoscopy revealed yellow blotches with sparing of the hair follicles (bottom). The remainder of the skin examination was unremarkable.

WHAT'S YOUR **DIAGNOSIS?**

a. carotenoderma
b. jaundice
c. localized trauma
d. orange palpebral spots
e. xanthelasma

PLEASE TURN TO PAGE E3 FOR THE DIAGNOSIS

From the Virginia Commonwealth University School of Medicine, Richmond. Dr. Venna also is from the Inova Schar Melanoma and Skin Cancer Center, Fairfax, Virginia.
The authors report no conflict of interest.
Correspondence: Kelly McCoy, MD, 8081 Innovation Park Dr, 5th Floor, Chesapeake Clinic, Fairfax, VA 22031 (mccoyk@vcu.edu).
doi:10.12788/cutis.0713

THE **DIAGNOSIS:** Orange Palpebral Spots

The clinical presentation of our patient was consistent with a diagnosis of orange palpebral spots (OPSs), an uncommon discoloration that most often appears in White patients in the fifth or sixth decades of life. Orange palpebral spots were first described in 2008 by Assouly et al[1] in 27 patients (23 females and 4 males). In 2015, Belliveau et al[2] expanded the designation to *yellow-orange palpebral spots* because they felt the term more fully expressed the color variations depicted in their patients; however, this term more frequently is used in ophthalmology.

Orange palpebral spots commonly appear as asymptomatic, yellow-orange, symmetric lesions with a predilection for the recessed areas of the superior eyelids but also can present on the canthi and inferior eyelids. The discolorations are more easily visible on fair skin and have been reported to measure from 10 to 15 mm in the long axis.[3] Assouly et al[1] described the orange spots as having indistinct margins, with borders similar to "sand on a sea shore." Orange palpebral spots can be a persistent discoloration, and there are no reports of spontaneous regression. No known association with malignancy or systemic illness has been reported.

Case reports of OPSs describe histologic similarities between specimens, including increased adipose tissue and pigment-laden macrophages in the superficial dermis.[2] The pigmented deposits sometimes may be found in the basal keratinocytes of the epidermis and turn black with Fontana-Masson stain.[1] No inflammatory infiltrates, necrosis, or xanthomization are characteristically found. Stains for iron, mucin, and amyloid also have been negative.[2]

The cause of pigmentation in OPSs is unknown; however, lipofuscin deposits and high-situated adipocytes in the reticular dermis colored by carotenoids have been proposed as possible mechanisms.[1] No unifying cause for pigmentation in the serum (eg, cholesterol, triglycerides, thyroid-stimulating hormone, free retinol, vitamin E, carotenoids) was found in 11 of 27 patients with OPSs assessed by Assouly et al.[1] In one case, lipofuscin, a degradation product of lysosomes, was detected by microscopic autofluorescence in the superficial dermis. However, lipofuscin typically is a breakdown product associated with aging, and OPSs have been present in patients as young as 28 years.[1] Local trauma related to eye rubbing is another theory that has been proposed due to the finding of melanin in the superficial dermis. However, the absence of hemosiderin deposits as well as the extensive duration of the discolorations makes local trauma a less likely explanation for the etiology of OPSs.[2]

The clinical differential diagnosis for OPSs includes xanthelasma, jaundice, and carotenoderma. Xanthelasma presents as elevated yellow plaques usually found over the medial aspect of the eyes. In contrast, OPSs are nonelevated with both orange and yellow hues typically present. Histologic samples of xanthelasma are characterized by lipid-laden macrophages (foam cells) in the dermis in contrast to the adipose tissue seen in OPSs that has not been phagocytized.[1,2] The lack of scleral icterus made jaundice an unlikely diagnosis in our patient. Bilirubin elevations substantial enough to cause skin discoloration also would be expected to discolor the conjunctiva. In carotenoderma, carotenoids are deposited in the sweat and sebum of the stratum corneum with the orange pigmentation most prominent in regions of increased sweating such as the palms, soles, and nasolabial folds.[4] Our patient's lack of discoloration in places other than the periorbital region made carotenoderma less likely.

In the study by Assouly et al,[1] 10 of 11 patients who underwent laboratory analysis self-reported eating a diet rich in fruit and vegetables, though no standardized questionnaire was given. One patient was found to have an elevated vitamin E level, and in 5 cases there was an elevated level of β-cryptoxanthin. The significance of these elevations in such a small minority is unknown, and increased β-cryptoxanthin has been attributed to increased consumption of citrus fruits during the winter season. Our patient reported ingesting a daily oral supplement rich in carotenoids that constituted 60% of the daily value of vitamin E including mixed tocopherols as well as 90% of the daily value of vitamin A with many sources of carotenoids including beta-carotenes, lutein/zeaxanthin, lycopene, and astaxanthin. An invasive biopsy was not taken in this case, as OPSs largely are diagnosed clinically. Greater awareness and recognition of OPSs may help to identify common underlying causes for this unique diagnosis.

REFERENCES

1. Assouly P, Cavelier-Balloy B, Dupré T. Orange palpebral spots. *Dermatology*. 2008;216:166-170.
2. Belliveau MJ, Odashiro AN, Harvey JT. Yellow-orange palpebral spots. *Ophthalmology*. 2015;122:2139-2140.
3. Kluger N, Guillot B. Bilateral orange discoloration of the upper eyelids: a quiz. *Acta Derm Venereol*. 2011;91:211-212.
4. Maharshak N, Shapiro J, Trau H. Carotenoderma—a review of the current literature. *Int J Dermatol*. 2003;42:178-181.