PhotoDermDiagnosis

Discovery of a new onset dark brown lesion

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A 27-year-old female attended her quarterly mole mapping appointment after returning from a sunny holiday. A suspicious dark brown lesion over right shoulder was identified on review of the standard body studio images obtained via fotofinder **(Figure 2)**. No prominent lesion was found at the corresponding site in the image from previous mole mapping **(Figure 1)**. The sudden appearance of a dark lesion caused alarm as the patient had a previous history of melanoma. Dermoscopy examination revealed a round lesion measuring about 5mm, with a brain like configuration of finger like structures and interspersed thinner dark brown streaks **(Figure 3)**.

Figure 1 Body studio image from previous consultation showing multiple non-concerning moles.

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Figure 2 Body studio image of same site at follow-up showing a new dark lesion marked with an arrow.

Figure 3 Dermoscopy image of the suspicious lesion on left shoulder.

Question 1 Which diagnosis, are the dermoscopy findings suggestive of?

1. Seborrheic Keratosis.

Answer Correct.

Explanation The brain like structure of this well demarcated lesion looks like a seborrheic keratoses although there are no comedone like or

milia like structures present, which can be quite characteristic of this.

2. Malignant melanoma.

Answer Incorrect

Explanation There are no sinister features suggestive of melanoma and the lesion is quite symmetric overall.

3. Congenital benign naevus.

Answer incorrect

Explanation Congenital naevi can be light or dark and can also have verruciform appearance. These are long-standing lesions and evolve slowly. They can also have some symmetrically distributed pigment globules and comma vessels.

4. Wart

Answer Incorrect

Explanation Viral warts are a differential diagnosis of keratotic lesions like seborrheic keratosis and squamous cell carcinomas in some cases, as all can have a verruciform surface.

5. Actinic keratosis.

Answer Incorrect

Explanation Pigmented actinic keratosis can sometimes be similar to a seborrheic keratosis, but quite often the thinner lesions have a strawberry like appearance that differentiates between the two.

Question 2 The dark lesion marked with an arrow in image 2 is not readily visible on the corresponding site from previous appointment. The skin appears to be tanned and the remaining moles are unchanged. What caused the darkening of this solitary lesion at follow up?

1. Cancerous change in a previous mole or new onset melanoma.

Answer Incorrect

Explanation Any new onset lesion or changing mole whether dark or not, especially in a patient with skin cancer history should be evaluated at the earliest. There are no features of a malignant pigmented melanocytic lesion in this dermoscopy image.

2. Irritation or infection in a seborrheic keratosis.

Answer Incorrect

Explanation Irritation in a seborrheic keratosis can cause a very alarming clinical and dermoscopic appearance leading to diagnostic confusion and can require a biopsy to differentiate from melanoma and squamous cell carcinoma. In our patient, lesion does not look inflamed.

3. Tanning caused by UV exposure

Answer Incorrect

Explanation: Although long term UV exposure is an important risk factor for melanoma formation, it does not typically cause sudden and severe darkening of individual benign lesions.

4. Artificial tanning by melatonin injections.

Answer Incorrect

Explanation Sometimes easily available online and used unregulated, these injections are used to artificially induce a tanned appearance of the skin. This can cause darkening of all

melanocytic naevi and lentigines and apparently new pigmented lesions can become visible.

5. Artefact caused by fake tan cream.

Answer Correct

Explanation With the increasing awareness of UV risks in today's population, use of artificial skin tanning products like sprays and lotions is on the rise. These products can accumulate and oxidize in the crypts of rough raised lesions like seborrheic keratosis, actinic keratosis and even benign naevi, leading to a bizarre dermoscopy appearance called St. Tropez sign which has been named after the popular holiday destination of St Tropez. [1,2] Figure 3 shows this sign in this patient.

Question 3 In the context of UV exposure to skin, which of the following lesions is not caused or aggravated by sunlight or artificial UV radiation?

1. Ephelid/freckle

Answer Incorrect

Explanation Well recognised on sun-exposed sites in fair skin individuals from childhood, freckles are more prominent and darker in summers and fade away in winters. UV exposure activates melanocytes causing increased production and localised accumulation of melanin often in the presence of MC1R gene.

2. Solar lentigo:

Answer Incorrect

Explanation Forming in chronically UV radiated skin mostly after 40s on photo exposed sites, these are refractory to treatment and histologically show slight increase in melanocytes with increased melanocyte activity along with acanthotic or atrophic epidermis.

3. Lentigo simplex

Answer Correct

Explanation Also known as juvenile lentigines, these are present since childhood and are not caused or affected by UV light. These can be darker and sparse and are formed by increase number of uniformly dispersed single melanocytes and hyperpigmentation in basal layer.

4. Melanocytic naevi

Anwser Incorrect

Explanation Acquired melanocytic naevi are benign neoplasms or hamartomas composed of melanocytes. Exposure to solar UV radiation is a well-established exogenous causal factor for their development [3]. Congenital melanocytic naevi are different, having been formed at embryogenesis but can be affected by UV radiation.

5. Melanoma

Answer Incorrect

Explanation UV exposure especially sun burn during childhood increases risk of melanoma and about 60-70 % of melanomas are thought to be caused by UV radiation exposure through DNA damage and oxidative stress.[4]

References

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