Brown Macules and Patches

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A 30-year-old, South American woman presents with brownish macules and patches on the face. The pigmentation developed five years ago with the birth of her second child. The lesions gradually increased in size and number over time. She was started on oral contraceptives after the birth of her second child. She enjoys a variety of outdoor activities. Her past health and family history are not contributory.

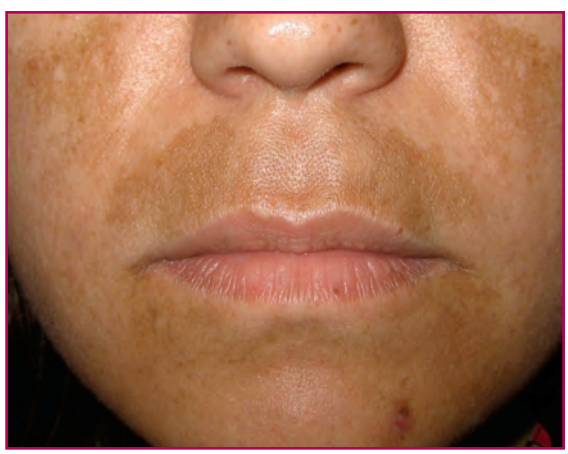
Physical examination reveals brownish macules and patches on the forehead, cheeks, nose, upper cutaneous lip, and chin. The rest of the physical examination is normal.

What is your diagnosis?

a. Nevus of Ota
b. Hori's nevus
c. Tinea versicolor
d. Melasma

Answer: Melasma

Melasma is an acquired disorder of hypermelanosis that is characterized by symmetrically distributed hyperpigmented macules/patches that involve sun-exposed areas, primarily the face. The term melasma is derived from the Greek word *melas*, meaning black. Synonyms include chloasma and mask of pregnancy (when it arises during pregnancy).[1] The term chloasma is derived from the Greek word *chloazein*, meaning green.



Epidemiology

Melasma is rarely reported before puberty and is most common in women of reproductive age.[2] The disease affects all racial groups but is most prevalent in dark-skinned individuals with Fitzpatrick skin types IV to VI, especially Hispanics/Latinos, Asians, and African Americans. The reported prevalence is between 4 and 10% among Latino females in the United States.[3,4] The prevalence is as high as 40% in Southeast Asian females.[4] UV light exposure and genetic predisposition are the most important risk factors.[5] Other risk factors include pregnancy, thyroid dysfunction, use of certain scented cosmetics, oral contraceptives, hormone replacement therapy, photosensitizing agents, and anticonvulsant medications (*e.g.*, phenytoin).[1,6] The female to male ratio is approximately 9:1.[6]

Pathogenesis

A high expression of α-melanocyte-stimulating hormone in lesional melanocytes and keratinocytes plays an important role in the hyperpigmentation of affected skin.[1] UV radiation induces melanocortin within melanocytes and keratinocytes.[5] The resultant increase in the number and activity of melanocytes enhances formation and transfer of melanosomes to the epidermis and dermis.[3]

Histopathology

Three histologic patterns of pigmentation have been described: epidermal, dermal, and mixed. In the epidermal type (most common), there is an increase of melanin deposits in the basal and suprabasal epidermal layers.[3] In the dermal type, many melanin-laden macrophages are seen in the superficial dermis, often surrounding perivascular spaces.[3] Mixed type shows a combination of the two patterns.

Clinical Manifestations

Typically, melasma presents with asymptomatic, symmetrically distributed macules/patches with serrated, irregular, and geographic borders.[2,6] The colour ranges from light or dark-brown to grey-brown.[2] Pigmentation can be guttate or confetti-like, linear, or confluent.[2] The lesions occur primarily on sun-exposed areas, mostly on the face and, occasionally, the forearms. The three clinical patterns of pigment distribution are centrofacial (65%), malar (20%), and mandibular (15%).[5,6] The centrofacial pattern involves the forehead, cheeks, upper cutaneous lip, nose, and chin, as is illustrated in the present case. The malar pattern involves the cheeks and nose; the mandibular pattern involves the ramus of the mandible.[4]

Pigmentation usually evolves slowly over weeks to months.[2] Epidermal melasma is usually light brown, and Wood's lamp enhances the colour contrast between hyperpigmented areas and normal skin. Dermal melasma tends to be greyish, due to the Tyndall effect, and exhibits no accentuation of colour contrast under Wood's lamp. Mixed type is usually dark brown with variable enhancement with Wood's lamp examination.

Diagnosis

The diagnosis is a clinical one. In vivo reflectance confocal microscopy can be used to define the presence and location of pigment in melasma.[7] Skin biopsy is occasionally warranted if the diagnosis is in doubt.

Differential Diagnosis

Differential diagnoses include post-inflammatory hyperpigmentation, drug-induced hyperpigmentation, ephelides (freckles), solar lentigines, exogenous ochronosis, nevus of Ota, Hori's nevus, café au lait macules/patches, actinic lichen planus, lentigo simplex, frictional melanosis, tinea versicolor, and flat seborrhoeic keratosis.[4]

Complications

Melasma is cosmetically unsightly and socially embarrassing. This is particularly true of facial lesions. The condition has a negative impact on quality of life and may result in psychological disturbances.[3]

Prognosis

The prognosis depends on the risk factors and the histologic subtype. Melasma may disappear or improve significantly several months postpartum or after cessation of offending agents, such as oral contraceptives. While epidermal pigmentation tends to respond better to depigmenting agents, dermal pigmentation responds variably and often unsatisfactorily.[2]

Management

Avoidance of sun exposure, regular use of broad-spectrum sunscreens, and wearing of protective hats and clothes when outdoors should be emphasized.[8] Offending agents, such as certain scented cosmetics, oral contraceptives, and photosensitizing agents, should be discontinued, if possible. Treatment of melasma involves the use of topical depigmenting agents, such as hydroquinone, retinoic acid, corticosteroids, kojic acid, and azelaic acid. Physical therapies, such as chemical peels (glycolic acid, trichloroacetic acid, salicylic acid, lactic acid), dermabrasion, lasers, and light sources have been used with varying degrees of success. Currently, limited evidence supports the efficacy and use of a triple combination product (modified Kligman formulation) with topical hydroquinone, a retinoid, and a steroid which is more effective than treatment with any two of the ingredients combined.[8,9] Camouflage make-up is also an important component of melasma management.[8] Referral to a dermatologist should be considered for this often chronic and difficult to treat condition. Dx

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