

Hyperpigmentary Disorders in India: Dermoscopic Insights and Management Approaches

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ABSTRACT

Hyperpigmentary disorders are common dermatological conditions in India, influenced by a variety of factors including genetic predisposition, hormonal imbalances, and sun exposure. These disorders can significantly impact the quality of life, especially in darker-skinned individuals. Dermoscopy has become a crucial tool in diagnosing and managing these pigmentary conditions by allowing for non-invasive examination of the skin's surface and deeper layers. This article reviews India's most prevalent hyperpigmentary disorders, their dermoscopic features, and treatment options, providing a comprehensive guide for clinicians treating such conditions.

Keywords: Hyperpigmentation, Dermoscopy, Melasma

INTRODUCTION

Hyperpigmentary disorders refer to conditions where excess melanin is produced in the skin, resulting in darker skin tones, patches, or spots. In India, the higher melanin content in skin types III to V on the Fitzpatrick scale predisposes individuals to these disorders. The increasing concern regarding pigmentation issues has made dermoscopy a valuable tool in dermatology. This article explores the clinical presentation, dermoscopic patterns, and treatment modalities for the most common hyperpigmentary disorders in the Indian population.

Common Hyperpigmentary Disorders in India

Melasma

Melasma is a common acquired condition that manifests as brown or gray-brown patches on sun-exposed areas of the skin, especially the face. Factors such as hormonal fluctuations, genetic predisposition, and UV radiation contribute to its development. Indian women, particularly during pregnancy, are disproportionately affected by melasma.

Post-Inflammatory Hyperpigmentation (PIH)

Post-inflammatory hyperpigmentation (PIH) results from various inflammatory skin conditions such as acne, eczema, or trauma. The inflammatory response triggers melanocyte activity, leading to excess melanin production. PIH is more common in individuals with darker skin, such as those of Indian descent, and often presents as dark patches following skin injuries or rashes.

Lichen Planus Pigmentosus (LPP)

LPP is a variant of lichen planus, presenting as hyperpigmented patches in sun-exposed areas or flexural regions. It is a chronic condition that affects individuals with darker skin tones, particularly those living in tropical climates such as India. The cause of LPP is not well understood but may be related to sun exposure or other environmental factors.

Acanthosis Nigricans

Acanthosis nigricans is characterized by darkened, thickened, velvety patches of skin, usually found in body folds such as the neck and armpits. In India, it is often associated with insulin resistance, obesity, and hormonal disorders such as polycystic ovary syndrome (PCOS).

Frictional Melanosis

This condition occurs when chronic friction between skin surfaces or clothing leads to the formation of dark patches, especially in areas like the neck, inner thighs, and underarms. In India, frictional melanosis is more common due to cultural practices and the wearing of tight clothing that may irritate the skin.

Erythromelanosis Follicularis

This rare condition presents with hyperpigmented and erythematous patches, primarily in young males. It often affects the face, neck, and upper arms and can be a source of cosmetic concern due to its visibility.

Dermoscopy in Hyperpigmentary Disorders

Dermoscopy is a non-invasive technique that allows for the visualization of subsurface skin structures, enhancing diagnostic accuracy. It is particularly useful in hyperpigmentary disorders, as it reveals patterns of melanin distribution and vascularity that are invisible to the naked eye.

Dermoscopy of Melasma

Dermoscopy of melasma typically reveals a pseudo-network with brown or gray-brown globules. The pigment distribution often follows a reticulated or honeycomb pattern, corresponding to the superficial epidermal and deeper dermal melanin deposits.

Dermoscopy of Post-Inflammatory Hyperpigmentation (PIH)

PIH appears on dermoscopy as homogenous brown or gray pigmentation, with irregular borders. Brown pigmentation indicates melanin confined to the epidermis, whereas grayish hues suggest dermal involvement.

Dermoscopy of Lichen Planus Pigmentosus (LPP)

LPP exhibits dermoscopic features such as slate-gray to dark brown homogeneous pigmentation. The presence of gray dots or granules within the pigmented areas is a hallmark of melanin within the dermis.

Dermoscopy of Acanthosis Nigricans

In acanthosis nigricans, dermoscopy reveals a pseudo-network pattern with thickened, velvety skin. Homogeneous brown or dark pigmentation is seen without much structural complexity.

Dermoscopy of Frictional Melanosis

Frictional melanosis shows a diffuse brown or black pigmentation on dermoscopy, typically without a structured pattern such as a pigment network or globules, but often presenting with a granular appearance.

Dermoscopy of Erythromelanosis Follicularis

This condition is characterized by perifollicular brown or gray pigmentation with keratotic plugs visible under dermoscopy. The pigmentation is usually diffuse and involves the hair follicles prominently.

Treatment of Hyperpigmentary Disorders in India

Topical Agents

Topical treatments are the first line of management for most hyperpigmentary disorders. Agents such as hydroquinone, kojic acid, azelaic acid, and retinoids are widely used to inhibit melanin production and promote skin lightening. These are particularly effective for epidermal pigmentation.

Chemical Peels

Chemical peels using glycolic acid, salicylic acid, or lactic acid are commonly employed to treat hyperpigmentation. Care must be taken in patients with darker skin types to avoid post-inflammatory hyperpigmentation after peeling.

LASER AND LIGHT-BASED THERAPIES

Lasers such as Q-switched Nd

and fractional lasers are used for deeper dermal pigmentation. Dermoscopy assists in determining the depth of pigmentation, guiding the choice of laser therapy. Intense Pulsed Light (IPL) is also an option for treating melasma and PIH, but with cautious application in Indian skin to avoid complications.

Sun Protection

Sun protection is essential for managing hyperpigmentary disorders, particularly melasma and PIH, as UV exposure exacerbates these conditions. Broad-spectrum sunscreens should be used daily to prevent worsening of pigmentation.

CONCLUSION

Hyperpigmentary disorders in India are prevalent due to a combination of genetic, environmental, and lifestyle factors. Dermoscopy provides a valuable tool for clinicians to diagnose these conditions and monitor treatment response accurately. As pigmentary disorders can have a significant psychological impact, effective management with tailored treatments, supported by dermoscopic evaluation, is crucial for achieving optimal outcomes.

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