Hyperpigmented Rash in an Obese 13-year-old Male

Christopher Heath, OMS III,[1] Ashley Jaglowicz, DO[2] & David Fivenson, MD[2]

[1] Lake Erie College of Osteopathic Medicine, Erie, PA
[2] St. Joseph Mercy Dermatology, Ann Arbor, MI

A 13-year-old obese (BMI >95% for age) African American male presented with dark brown papules on the trunk that had been present for several months. The rash began on the central chest and spread to involve the upper and lower back, neck, and flanks. The patient denied pain, pruritus, and burning, and was only concerned about the pigment change. He had tried switching to a mild soap but the lesions continued to progress. Physical examination revealed dark brown warty papules coalescing into plaques circumferentially around the neck, upper and lower central back, flanks and central chest *(Figure 1)*. A potassium hydroxide (KOH) preparation was performed in the office and was negative.

QUESTION

What is the most likely diagnosis?

A. Tinea versicolor

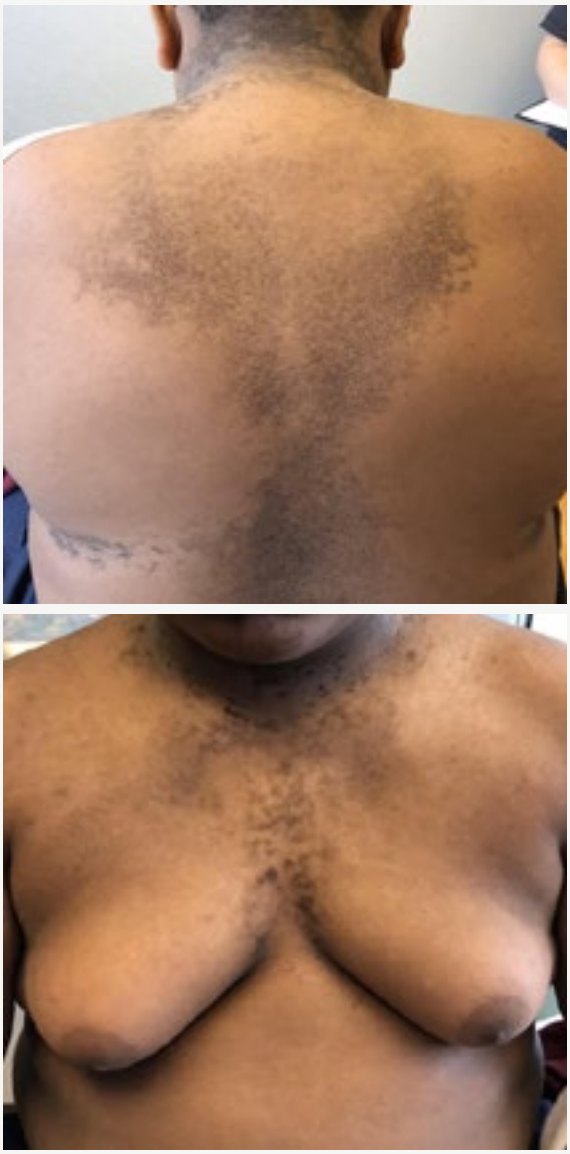
B. Acanthosis nigricans

C. Seborrheic dermatitis

D. Confluent and reticulated papillomatosis

E. Darier disease

FIGURE 1:



CORRESPONDENCE:
Ashley Jaglowicz, DO | ashleyjag@gmail.com

ANSWER:

What is the most likely diagnosis?

Correct Answer: D) Confluent and reticulated papillomatosis

DISCUSSION

CARP is an uncommon dermatologic condition characterized by the presence of small, hyperpigmented, hyperkeratotic or verrucous papules that coalesce to form plaques with a peripheral reticulated appearance and preserved skin markings.[1,2] Onset is usually at puberty; the eruption is generally asymptomatic, begins on the neck, chest or upper back and spreads centrifugally. A KOH preparation to rule out fungus should be performed, which will be negative, and a skin biopsy can be used when the diagnosis is unclear, which will reveal papillomatosis with mild acanthosis and hyperkeratosis.[3] The differential diagnosis will often include acanthosis nigricans (AN), tinea versicolor and seborrheic dermatitis.[1]

The pathophysiology of CARP is uncertain; however, it's thought to be due to an endocrine disturbance, abnormal keratinocyte maturation, an abnormal host response to bacteria or fungi, or possibly hereditary. The leading theory is that CARP is a disorder of keratinization that results in hyperproliferation.[2] This has been supported with the histological appearance showing increased transition cell layer and lamellar granules in the stratum granulosum as well as the lack of consistently identified bacteria.[2]

Both CARP and AN appear similar, however CARP often begins in the central chest or interscapular areas and will nearly always involve the trunk; while AN favors the axilla and neck and is rarely found on the trunk.[4] Both are often observed in overweight or obese patients. Tinea versicolor is mildly pruritic and will often have a fine scale present. A positive KOH with hyphae and yeast in tinea versicolor will differentiate between the two. Seborrheic dermatitis often has an underlying red color in addition to greasy scale on top and is found in areas rich in sebaceous glands, such as the face, scalp, neck, upper chest and back.[5] Darier disease is an autosomal dominant condition exhibiting greasy brown hyperkeratotic papules in a seborrheic distribution.[6] Darier disease can be differentiated from CARP by cobblestoning of the oral mucosa, v-shaped notching or parallel red and white bands of the nails and palmoplantar pitting.[1]

Current first line treatment for CARP is minocycline 100mg BID for six weeks.[7,8] In patients who cannot take minocycline, such as those with allergies or who are pregnant, Azithromycin has been used with some success. CARP has also been shown to respond to isotretinoin, however, minocycline is still the preferred agent due to its more favorable safety profile. Topical therapies such as topical retinoids, urea, calcipotriol and tacrolimus have also been used with some success.[6]

AUTHOR DISCLOSURE:
No relevant financial affiliations

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