A spectrum of scaly rashes

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Dermatophile has a new format. From now on, it will take the form of a short quiz to test and inform your knowledge of dermatology relevant to paediatrics. Any suggestions for improvement or topics you would like to be covered are welcome. Please email comments and feedback to p-lio@northwestern.edu.

Theme: Scaly rashes

Select the one best answer from the following:

a. Tinea corporis (ringworm)
b. Acanthosis nigricans
c. Confluent and reticulated papillomatosis (CARP)
d. Pityriasis (tinea) versicolor
e. Drug hypersensitivity eruption
f. Scabies infestation
g. Terra firma-forme dermatosis

ANSWERS
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1. The answer is D, pityriasis (tinea) versicolor. This patient has hyperpigmented, scaly, oval-shaped patches with a positive fungal scraping. The morphology along with the more widespread distribution favours pityriasis versicolor over tinea corporis. Spore forms on the fungal scraping (the 'meatballs' of the so-called 'spaghetti and meatballs' pattern) would help confirm this as well.

The recent history of increased sweating probably played a part in creating a more favourable environment for the yeast Malassezia to convert from normal skin flora to pathogen in this condition. Though treatment is generally effective, it tends to recur in susceptible individuals. Selenium 2.5% or zinc pyrithione 1% shampoos are safe and inexpensive for first-line treatment, but topical antifungal creams and even systemic treatment can be necessary to clear the skin.1 Frequently, the fungus can be eradicated long before the pigmentation returns to normal. This form of 'treatment failure' is important to distinguish as further anti-fungal treatment will not be of use at that point and only more time is needed for the pigmentation to resolve.

2. The answer is C, confluent and reticulated papillomatosis, sometimes abbreviated as ‘CARP’. This idiopathic and somewhat uncommon dermatosis tends to appear confluent at the centre and more reticulate or net-like at the periphery. It frequently appears on the neck, chest and abdomen but may also affect the back.

The clinical differential diagnosis includes acanthosis nigricans and pityriasis versicolor. The characteristic morphology, the lack of obesity and the absence of more typical acanthosis nigricans lesions at the posterior neck and in the axillae, suggested CARP as the best diagnosis. Pityriasis versicolor can also look very similar and a fungal scraping was performed to exclude this entity. Interestingly, CARP frequently responds to systemic treatment with antibiotics, particularly minocycline. In this case, after 4 weeks of minocycline the eruption totally cleared, securing the diagnosis ex juvantibus.

3. The answer is B, acanthosis nigricans. Characterised by thickening and hyperpigmentation of the skin most often in the axilla and neck areas, there are several subtypes of this skin finding. This case is an example of the most common type: obesity-related acanthosis nigricans. Although there is a subtype associated with malignancy, this variant is relatively rare.2

Although there are no randomised controlled trials for the treatment of acanthosis nigricans, many reports suggest that it will improve with treatment of the underlying condition or by using topical retinoids.3

4. The answers are B and C, both acanthosis nigricans and confluent and reticulated papillomatosis (CARP). This case nicely illustrates the clinical and morphological overlap between these entities. This patient had significant improvement of the rash after 2 months of minocycline, but did continue to have some hyperpigmentation and thickening in the neck, mid-chest and axillary areas which represented the acanthosis nigricans. In general, pityriasis versicolor, CARP and acanthosis nigricans share several clinical, morphological and histological features and have variously been considered together at times.4 These independent entities, however, can and must be differentiated as their aetiologies, treatments and prognoses are distinct.

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REFERENCES

Question 1
This 12-year-old boy presented with several months of hyperpigmented, scaly patches on the neck and upper chest (figure 1). He had recently begun playing an after-school sport and had been wearing sweaty clothes home from school frequently. He was otherwise healthy. A scraping for fungus was positive. What is the most likely diagnosis?

Question 2
This 17-year-old boy presented with 8 months of a hyperpigmented, scaly and somewhat reticulate eruption on the chest, back and abdomen (figure 2). It was asymptomatic but was unsightly and appeared to be slowly worsening. He was otherwise healthy. The posterior neck and axillae were clear and the remainder of his skin examination was normal. A scraping for fungus was negative. What is the most likely diagnosis?

Question 3
This 15-year-old girl presented with 1 year of increasingly hyperpigmented and velvety areas around her neck and in her axillae (figure 3). She noted multiple small tags in these areas as well, which would become irritated by her clothing at times. She had a strong family history of diabetes and was obese herself, with a body mass index (BMI) of 38. What is the most likely diagnosis?

Question 4
This 16-year-old boy presented with 6 months of a thickened, hyperpigmented, scaly and reticulate eruption on the chest, back and abdomen (figure 4). He was obese with a BMI of 40, displayed prominent gynecomastia, and had insulin resistance documented by glucose tolerance testing. A scraping for fungus was negative. What is the most likely diagnosis?