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Case Report Open Access

Pintoid Dyschromia of Yaws: A Rare Presentation of a Neglected Infectious Disease

Kumarasinghe APW[1] and Kumarasinghe SPW[2]

[1]Sir Charles Gairdner Hospital, Nedlands, WA, Australia
[2]Department of Dermatology, Fiona Stanley Hospital and University of Western Australia, Australia

Introduction

Yaws (framboesia) is a rare condition today in most developed countries. Rarely sequelae of previous yaws infections are noted in patients with a history of yaws. We describe a 53 old man presenting with multiple ill-defined asymptomatic hypopigmented, normosensitive macules on the on the body, developing gradually over a few years.

Case Report

A 53 year old man, who is originally from the West Indies, with Fitzpatrick Type 5 skin presented with hypopigmented ill-defined macules on the entire body that appeared over a period of several years. He did not have any recent history of preceding inflammation or pruritus in these areas. Hypopigmented macules were few millimetres to several centimetres in diameter; they were most prominent on his scalp, upper limbs and the upper trunk. There were hyper-keratotic plaques on both feet. He had a history of increased titres of syphilis serological tests, he had been treated on suspicion of having had syphilis. There was no history of syphilitic chancres or any clinical features of secondary syphilis. On direct questioning he admitted that he had yaws as a child when he was living in Jamaica, the West Indies, where yaws was endemic at that time. Several other family members also had yaws at the same time according to him. It had been treated with only home remedies according to him. There was no history of pinta. A skin biopsy was done from a hyperkeratotic lesion on the right foot. It showed non-specific changes including parakeratosis, acanthosis of epidermis with a prominent granular layer, and a moderate superficial perivascular lymphocytic infiltrate. There was no evidence of psoriasis. It was not diagnostic but hyperkeratotic lesions of yaws could not be ruled out. Multiple biopsies from the hypopigmented macules did not show any evidence of leprosy, vitiligo, hypopigmented mycosis fungoides or eczema, it showed non-specific perivascular and perifolliciular lymphocytic infiltration. The histopathology was non-specific. Melanocytes were present in the epidermis as confirmed by immunohistochemical studies. Serological tests for treponemal infection were positive (*Treponema pallidum* particle agglutination Assay 4+ and negative rapid plasma reagin test). His basic blood tests including liver functions, TSH, Free T4, full blood count, antinuclear factor, iron studies, blood sugar level, and the skin scrapings for fungi were unremarkable. Molecular diagnostic methods specific for *Treponema pertenue,* such as whole genome sequencing were not available at our facility.

As there is no method to distinguish between syphilis and previous yaws, he was treated again with a full course of benzathine penicillin injections (1.8 g weekly for 3 weeks) as for syphilis. A diagnosis of pintoid dyschromia of yaws was made. As he was mostly concerned about the pigmentary changes of skin, narrowband ultraviolet B therapy was tried for 3 months. He had only a very slight improvement of the colour of the macules. As such NBUVB treatment was discontinued.

Discussion

Yaws is due to the spirochete *Treponema pertenue,* it is a subspecies of [1-3]. Yaws is less common now compared to the past. According to WHO data, it is still found in tropical humid countries; in some parts of Asia, Africa, Latin America and the Western Pacific (e.g. Ghana >20000 cases, Papua New Guinea >28000 cases, worldwide between 2008-2012 >300000 new cases reported to WHO). Overcrowding, poor hygiene and poor sanitation facilitate disease spread. Yaws was common in rural West Indies where our patient grew up. The West Indies was among the countries which had a history of endemic yaws [4-7].

Yaws is characterized by three stages; an initial ulcer called 'Mother yaws', early non-destructive lesions and late destructive lesions on skin, mucous membranes and bones. By serological tests it is not possible to differentiate yaws, from pinta (due to *Treponema carateum*) and Syphilis (due to *Treponema pallidum*) [1-3]. He was treated as for syphilis with benzathine penicillin, which is also effective for Yaws, although we did not think he had active yaws at the time of diagnosis of pintoid dyschromia of yaws. Pinta is another treponemal disease that causes depigmented macules and plaques of skin. Hypopigmented or depigmented lesions due to yaws are uncommon [8,9], whereas they are more common in pinta. Recently Mitja et al have reported that a single dose of Azithromycin 30 mg/kg is also effective in treating yaws. WHO plans to 'eradicate 'yaws by year 2020 [10-12].

Diagnosing late stage yaws conclusively is difficult due to serological positivity to tests for treponema may be due to syphilis, yaws or pinta. Specific molecular diagnostic tests for *Treponema pertenue,* to differentiate from other subspecies of treponema, are now available in some specialized research centres [13], however they were not available in our facility. The history, and the constellation of clinical features would make a clinician suspect yaws. There is no known cure for pintoid dyschromia of yaws. Cellular grafting of keratinocytes and melanocytes after dermabrasion or laser-abrasion of hypopigmented

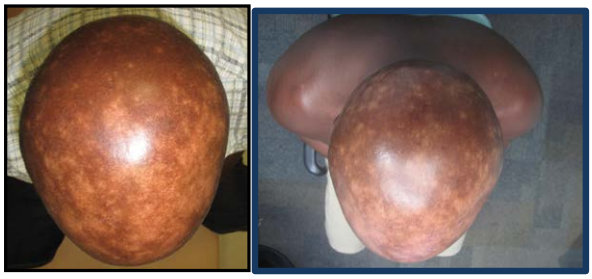

Figure 1: Hypopigmented, normosensitive macules most prominent on the scalp and the upper trunk.

***Corresponding author:** Kumarasinghe SPW, Clinical Associate Professor and Consultant Dermatologist, Department of Dermatology, Fiona Stanley Hospital, Murdoch Drive, Murdoch, Australia, E-mail: prasadkumarasinghe@yahoo.com

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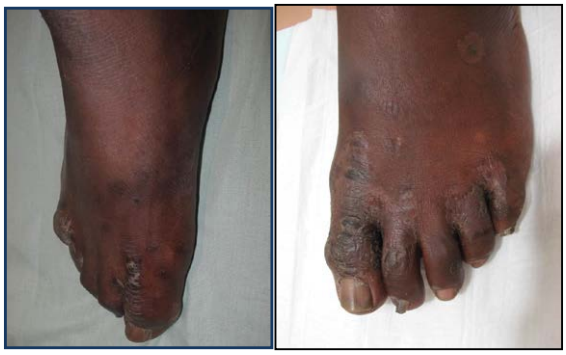

Figure 2: Hyperkeratotic skin lesions on the feet.

macules may be effective, however our patient did not opt for this option of treatment due to financial constraints.

Conclusion

We present this case to highlight that yaws should still be considered in hypopigmented macules in a patient with a past history of yaws, or is from an area previously endemic for yaws, with a positive TPPA and sequelae consistent with yaws.

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