

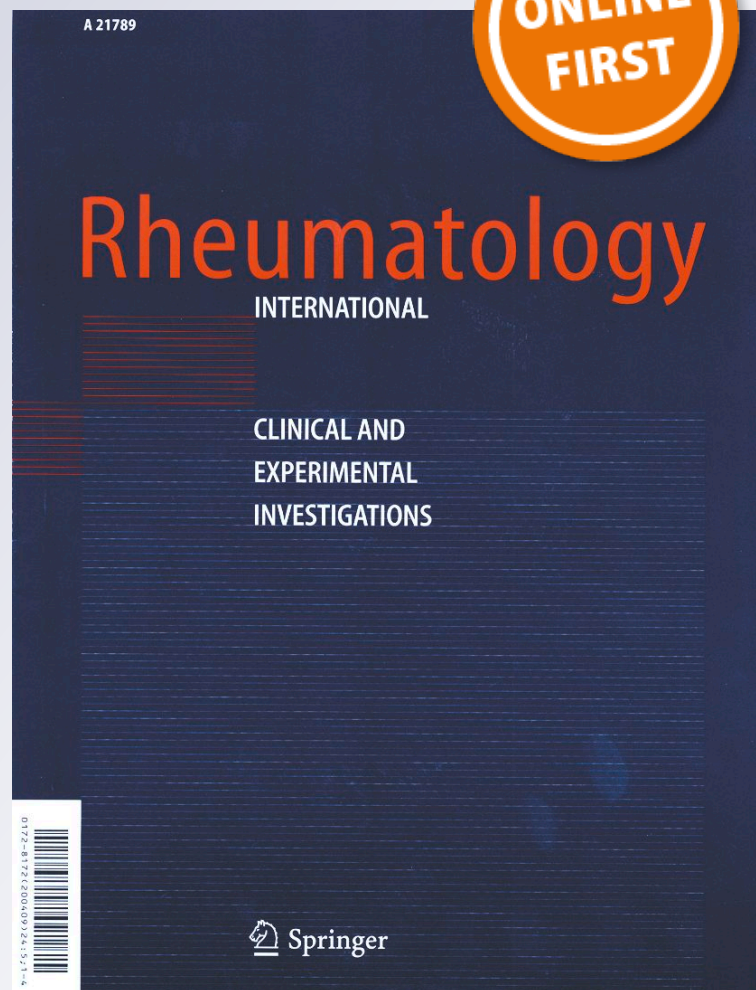
Orange–brown chromonychia, a novel finding in Kawasaki disease

Priyankar Pal & Prabhas Prasun Giri

Rheumatology International
Clinical and Experimental Investigations

ISSN 0172-8172

Rheumatol Int
DOI 10.1007/s00296-012-2521-2



Your article is protected by copyright and all rights are held exclusively by Springer-Verlag. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your work, please use the accepted author's version for posting to your own website or your institution's repository. You may further deposit the accepted author's version on a funder's repository at a funder's request, provided it is not made publicly available until 12 months after publication.

Orange–brown chromonychia, a novel finding in Kawasaki disease

Priyankar Pal · Prabhas Prasun Giri

Received: 7 March 2012 / Accepted: 23 August 2012
© Springer-Verlag 2012

Abstract Kawasaki disease (KD) is one of the commonest vasculitis of childhood, where diagnosis is clinical based on a plethora of signs and symptoms. One of the typical findings is the changes in the extremities including the nail changes. Orange–brown chromonychia is a colour change in the nails which has been observed in some cases of KD. Here, we report a series of 40 patients of KD, where a typical transverse orange–brown discolouration of nails or chromonychia was noted in 29 patients. Though chromonychia is noted in many other rheumatic and nonrheumatic diseases, the typical transverse orange–brown chromonychia observed in KD patients can be included as an additional clinical feature in diagnosis of KD.

Keywords Kawasaki disease · Orange–brown chromonychia · Nail changes

Abbreviation

KD Kawasaki disease

Introduction

Nails, particularly fingernails, may show signs that are important not only for detection of diseases of the nails

itself, but also of diseases of other organs or the system as a whole. Changes in colour of nail plates or nail beds seem to suggest the parts are windows to what is happening inside the body. Chromonychia is a term used to indicate an abnormality in colour of the substance and/or surface of the nail plate and/or subungual tissues [1]. Many diseases and drugs are associated with chromonychia. But association with Kawasaki disease (KD) is relatively a new observation. In our case series, almost 75 % of KD patients presented with orange–brown chromonychia.

Patients and methods

Clinical records of children aged below 10 years who fulfilled the diagnostic criteria of KD and admitted at the Institute of Child Health, Kolkata during the time period of April 2009 to April 2011 were reviewed. The diagnosis of KD was based on the typical clinical findings with the help of relevant laboratory investigations and exclusion of other diseases. The data collected included details of clinical and laboratory features, treatment and outcome. The patients with chromonychia was registered and closely followed up.

Results

Amongst the 40 children with KD, orange–brown chromonychia was noted in 29. In all the cases, this transverse orange–brown discolouration of finger and toe nails started appearing between 5th and 8th day of onset of fever. The chromonychia migrated distally as the nails grew. At around 2 weeks, it begins to fade with complete disappearance over the next 7–10 days. The colour change is better appreciated in the finger nails rather than the toe

P. Pal (✉) · P. P. Giri
Department of Pediatric Rheumatology,
Institute of Child Health, Kolkata, West Bengal, India
e-mail: mailme.priyankar@gmail.com

P. Pal
2/G, Dilkusha Street, Kolkata 700017, India

P. P. Giri
C1, ANANDAN, 173, Sarat Ghosh Garden Road, Dhakuria,
Kolkata 700031, India

nails. There was no evidence of any other disease or drugs that could lead to chromonychia (Figs. 1, 2, 3).

Discussion

Kawasaki disease is an acute febrile vasculitic syndrome caused mainly by the affection of the medium- and small-sized blood vessels. Amongst the clinical features of the disease, there are few typical nail changes that have been well described; commonest being the periungual desquamation and the transverse leukonychia (Beau's lines) [2]. There are also few case reports regarding onycholysis in KD. Ciastko reported onychomadesis (spontaneous separation of the nail from the matrix) of all 20 nails in an 8-year-old boy with KD, which started 1 week after periungual desquamation [3]. The proximal nails subsequently grew normally, with minimal evidence of residual scarring. Spontaneously resolving pincer nail deformity (transverse curling of the nail along its longitudinal axis) [4] in an infant with KD and leukonychia partialis [5] (abnormally white proximal portion of the nail) have also been reported. These nail abnormalities are nonspecific and, in the context of KD or other systemic triggers, generally resolve spontaneously within 1–2 months.

Chromonychia or abnormal colour of nails is described following the use of antineoplastic drugs with few distinct forms, the most frequently seen is melanonychia [6]. Although a few cytostatics may cause these changes, the drugs most commonly involved are adriamycin, cyclophosphamide and vincristine, or in polychemotherapy [7], thermal injury, contact exposure to elemental iron, angiotensin-receptor blockage therapy, use of nail hardener, and in association with systemic lupus erythematosus and hyperbilirubinemia. Green chromonychia has been reported in association with *Pseudomonas* infection [8]. Chromonychia is also associated with AIDS, significant ($p < 0.05$) being with CD4 counts below 200 per cubic millimetre [9].

The transverse orange–brown chromonychia in relation to KD is relatively a novel finding. Lindsley was the first to describe this unusual red transverse nail-bed lines in four patients with KD [2] followed by Thapa et al. [10] who described this in two cases. But no large case series was published earlier with these findings. The reported children had transverse orange–brown chromonychia of all 20 nails, which developed during the late acute phase or early subacute phase of KD, and sometimes were replaced by transverse leukonychia. A careful literature search failed to reveal such large observation of chromonychia in KD.

However, it needs to be mentioned that similar orange–brown chromonychia has also been observed in other rheumatological diseases like systemic arthritis and



Fig. 1 Orange brown chromonychia of fingers during acute stage



Fig. 2 Chromonychia of fingers during subacute Kawasaki disease with desquamation



Fig. 3 Chromonychia involving toe nails

hemophagocytic lymphohistiocytosis. Now, individually none of the clinical features of KD is unique to the disease. But, observed together or sequentially they form a pattern that is diagnostic. Our suggestion is to incorporate orange-brown chromonychia as an add-on clinical finding to the existing armamentarium.

Conflict of interest None.

References

1. Freedberg IM (2003) Fitzpatrick's dermatology in general medicine, 6th edn. McGraw-Hill, New York
2. Lindsley CB (1992) Nail-bed lines in Kawasaki disease. *Am J Dis Child* 146:659–660
3. Ciastko AR (2002) Onychomadesis and Kawasaki disease. *Can Med Assoc J* 166:1069
4. Vanderhooft SL, Vanderhooft JE (1999) Pincer nail deformity after Kawasaki's disease. *J Am Acad Dermatol* 41:341–342
5. Iosub S, Gromisch DS (1984) Leukonychia partialis in Kawasaki disease. *J Infect Dis* 150:617–618
6. Unamuno P, Fernández-López E, Santos C (1992) Leukonychia due to cytostatic agents. *Clin Exp Dermatol* 17(4):273–274
7. Dasanu CA, Vaillant JG, Alexandrescu DT (2006) Distinct patterns of chromonychia, Beau's lines, and melanoderma seen with vincristine, adriamycin, dexamethasone therapy for multiple myeloma. *Dermatol Online J* 12(6):10
8. Shellow WV, Koplun BS (1968) Green striped nails: chromonychia due to *Pseudomonas aeruginosa*. *Arch Dermatol* 97:149–153
9. Monsel G, Ly F, Canestri A, Dioussé P, Ndiaye B, Caumes E (2008) Prevalence of skin disorders in HIV patients in Senegal and relationship to degree of immunosuppression. *Ann Dermatol Venereol* 135(3):187–193 (in French)
10. Thapa R, Pal P (2010) Transverse orange-brown chromonychia in Kawasaki disease. *Int J Dermatol* 49(2):227–228