

20<sup>th</sup> International Conference on

# Pediatrics & Primary Care

September 03-04, 2018 | Zurich, Switzerland

## Acral rashes in an infant with Parechovirus meningitis

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A 2-month-old girl presented with fever and irritability. She was born full term with no other medical problems. Her vital signs were stable. Other than a generalized maculopapular exanthema, physical examination was normal. On day three of fever, she developed non-tender palmoplantar erythema (Figure 1 and 2). Parents declined administration of intravenous antibiotics. The white cell count was  $4.33 \times 10^9/L$  ( $5-15 \times 10^9/L$ ; 42% neutrophils, 36% lymphocytes, 21% monocytes). Hemoglobin level and platelet count were normal. C-reactive protein and procalcitonin levels were unremarkable. Full septic workup did not yield growth of any organism. Cerebrospinal fluid (CSF) showed no pleocytosis, with normal protein and glucose levels. Real-time PCR analysis of CSF detected parechovirus RNA (the serotype was not analyzed in this case). Fever subsided subsequently and she was discharged after three days. Differential diagnoses of an acral rash include Kawasaki disease (KD), contact dermatitis, and hot hand-foot syndrome caused by *Pseudomonas aeruginosa* and parvovirus infection. In addition, infants with enterovirus infections (hand-foot-mouth disease) can also present with similar rashes on the palms or soles. She had no other clinical stigmata of KD and the blood inflammatory markers were not significantly raised. Contact dermatitis presents with vesicular, weepy, crusted eczematous plaques instead and is less commonly seen in her age group. Moreover, she had no history of contact allergen or topical agents applied to her palms preceding the rash. Hot hand-foot syndrome presents with red and tender palmoplantar nodules after exposure to *Pseudomonas aeruginosa* in warm pools with low pH and low chlorine levels. Papular-purpuric gloves and socks syndrome, usually seen in parvovirus B19 infection, presents with erythematous and purpuric papules on dorsal, palmar and plantar surfaces of distal extremities. This infant had parechovirus meningitis with palmoplantar erythema and a non-specific maculopapular rash, both of which were previously described. Palmoplantar erythema in a febrile infant is uncommon and can be a diagnostic sign for parechovirus infection. In suspected meningoencephalitis cases, CSF should be sent for parechovirus testing despite normal CSF microscopy as the majority of infants with parechovirus meningitis had no CSF pleocytosis. If real-time PCR analysis of CSF detected parechovirus RNA, it would also be useful to analyze the serotype of parechovirus involved. As parechovirus can present with a sepsis-like syndrome and encephalitis in neonates and infants, recognizing its dermatologic manifestations can be helpful to streamline investigations and avoid unnecessary skin biopsies. Paraviral palmoplantar erythema was self-limiting in this case and did not require specific treatment. This observation can potentially be added to the list of lesser known parainfectious exanthems.



Figure : 1



Figure : 2

### Recent Publications:

1. Admani S and Jacob S E (2014) Allergic contact dermatitis in children: review of the past decade. Current allergy and asthma reports 14(4):421.
2. Yu Y, Cheng A S, Wang L, Dunne W M and Bayliss S J (2007) Hot tub folliculitis or hot hand-foot syndrome caused by *Pseudomonas aeruginosa*. Journal of the American Academy of Dermatology 57(4):596-600.

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3. Fretzayas A, Douros K, Moustaki M and Nicolaidou P (2009) Papular-purpuric gloves and socks syndrome in children and adolescents. *The Pediatric infectious disease journal* 28(3):250-2.
4. Shoji K, Komuro H, Miyata I, Miyairi I and Saitoh A (2013) Dermatologic manifestations of human parechovirus type 3 infections in neonates and infants. *The Pediatric infectious disease journal* 32(3):233-6.
5. Vergnano S, Kadambari S, Whalley K, et al. (2015) Characteristics and outcomes of human parechovirus infection in infants (2008-2012). *European journal of pediatrics* 174(7):919-24.

## **Biography**

Dawn Lee has completed her PhD at the age of 23 years from National University of Singapore, School of medicine. She has spent her post-graduate years rotating through various specialities in tertiary hospitals in Singapore and has obtained pediatric specialist accreditation in year 2015. She is a general pediatrician at KK Women's and Children's Hospital in Singapore, and participates actively in research publications as well as teaching activities of medical staff and students.

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