

## CASE REPORT

# Leukocytoclastic small-vessel vasculitis as a manifestation of Covid 19 infection in children, case report

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### ABSTRACT

COVID-19 in children is generally uncommon. Symptomatic children are often afflicted with cough, fever, pharyngitis, and gastroenteritis. Cutaneous manifestations in children include erythematous maculo-papular lesions, Kawasaki-like disease. Here we present two young cases with skin manifestation after being diagnosed with COVID 19 in children.

Keywords: small-vessel vasculitis, Covid19, children.

### INTRODUCTION

Diagnosis of COVID-19 in children is generally uncommon.<sup>5</sup> Symptomatic children are often afflicted with cough, fever, pharyngitis, and gastroenteritis.<sup>5</sup> Cutaneous manifestations in children include erythematous maculo-papular lesions, Kawasaki-like disease,<sup>6</sup> The outbreak of the pandemic draws attention to the multiple presentations of the disease. Here we present two young cases with skin manifestation after being diagnosed with COVID 19 in children.

### CASES REPORT

A four -month - old girl with low-grade rash-related fever for 2 days and moderate lower limbs edema.

No history of new medication, nor any new vaccines, and she was solely breast-fed.

Her father was confirmed to be infected with Covid-19 by PCR and radiologically, and was home-isolated, after few days the baby tested positive for rapid SARS-CoV2 IgM test.

Examination revealed that axillary body temperature was 37.4 °C, respiratory rate, heart rate and blood pressure were normal, the general condition was good.

The skin showed bilateral annular, medalion like, ecchymotic, large purpuric, targetoid plaques with oval and round shapes on the face, extremities and genitalia ranging from 1 to 5 cm in diameter, some coalescent, and free trunk. There was mild swelling of lower extremities and the range of motion of all joints was normal. There was no mucosal involvement. (Fig. 1 A, B, C, D).

Urine analysis, liver and renal functions were

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normal, stool analysis for occult blood was negative. For this case the parents refused to do skin biopsy, and dermoscopic examination revealed irregularly shaped red patches with blurred borders. (Fig. 1E)

Paracetamol (250 mg/8 hours), vitamin C, and zinc were recommended. Fourteen days later, the lesion started to fade out, and completely disappeared after 27 days. (Fig. 1F)

### THE SECOND CASE

A three-year-old boy presented to us with bilateral annular ecchymotic, large purpuric patch of variable shapes and sizes in the face, ears, upper and lower extremities, this lesions developed after 4 days of the patient testing positive for COVID 19. (Fig. 2)

Laboratory investigations revealed elevated white blood cell count and erythrocyte sedimentation rate (ESR), serum IgA was normal



**Fig. 1** A four -month - old girl with targetoid lesions on the upper limbs(A), lower limbs(B,C), sparing the trunk(D), with facial and auricular lesions(E), (F) dermoscopic appearance of the aforementioned lesions, (G,H) Skin manifestations 2 weeks after the onset showing resolution of most of the lesions with fading out of the targetoid appearance.

260 mg/dl (N=80-350 mg/dl), activated partial thromboplastin time (aPTT), antistreptolysin O titer, platelet count, INR, D-Dimer, Complement 3, Complement 4, liver and renal functions all were normal, stool analysis for occult blood was negative. Urine analysis revealed microscopic hematuria without proteinuria. We took skin biopsy which revealed leukocytoclastic vasculitis. (Fig. 2)

### Chest x ray were normal

The patient was admitted at hospital to close follow up, prednisone (0.5 mg/kg/d), vitamin c, and zinc were recommended. After 10 days the urine analysis was normal, and after thirty days, the lesions started to fade out by post inflammatory hyperpigmentation and all labs return normal. Acute hemorrhagic edema of infancy (AHEI), is a rare leukocytoclastic small-vessel vasculitis



**Fig. 2** A three-year-old boy presented with bilateral annular ecchymotic, large purpuric patch with variable shapes and sizes at the face, ears, upper and lower extremities

that usually causes purpura in children aged 4 to 36 months,<sup>1</sup> similar to Henoch-Schonlein purpura (HSP), which involves visceral affection and affects older age groups and diagnosed by cri-

teria, some authors consider AHEI as a cutaneous variant of HSP so the distinction between the two types is crucial,<sup>8</sup> on the other hand, AHEI is a self-limited disorder that typically ends within 2 weeks of onset<sup>4</sup> and diagnosis is clinical and does not require biopsy.<sup>3</sup> Our knowledge the skin lesions at AHEI is ecchymotic, large purpuric, at the face, extremities and genitalia but the skin lesions at HSP is small palpable purpura common at buttocks and lower extremities, IgA level is usually normal in AHEI but elevated at HSP but till now COVID 19 surprised us with atypical, unusual skin manifestations, our second case had skin lesions similar to AHEI in morphology but with visceral affection  
Dermatologist should be considered COVID-19 diagnosis in children with unusual skin manifestations and its associations with variable morphology.

## REFERENCES

1. Fiore E, Rizzi M, Ragazzi M, Vanoni F, *et al.* Acute hemorrhagic edema of young children (cockade purpura and edema): A case series and systematic review. Vol. 59, J Amer Acad Dermatol. Mosby; 2008. p. 684-95.
2. Savino F, Lupica MM, Tarasco V, Locatelli E, Viola S, di Montezemolo LC, *et al.* Acute Hemorrhagic Edema of Infancy: A Troubling Cutaneous Presentation with a Self-Limiting Course. Ped Dermatol [Internet]. 2013 Nov 1 [cited 2020 Aug 27];30(6):e 149-52.
3. Garcia-Muro C, Esteban-Zubero E, Toledo-Gotor C, Viguera-Elias D, Olloqui-Escalona A, Jimenez-Escobar V. Acute Hemorrhagic Edema of Infant: A Case Report. Mathews Journal of Pediatrics [Internet]. 2019 Jun 28 [cited 2020 Aug 26];4(1).
4. Risikesan J, Koppelhus U, Steiniche T, Deleuran M, Herlin T. Methylprednisolone Therapy in Acute Hemorrhagic Edema of Infancy. Case Reports in Dermatological Medicine. 2014;2014:1-3.
5. Lu X, Zhang L, Du H, Zhang J, Li YY, Qu J, *et al.* SARS-CoV-2 Infection in Children. New Eng J Med [Internet]. 2020 Apr 23 [cited 2020 Aug 26];382(17):1663-65.
6. Genovese G, Colonna C, Marzano A v. Varicella-like exanthem associated with COVID-19 in an 8-year-old girl: A diagnostic clue? Pediatric Dermatology [Internet]. 2020 May 19 [cited 2020 Aug 26];37(3):435-36.
7. Krause I, Lazarov A, Rachmel A, Grunwald MM, Metzker A, Garty BZ, *et al.* Acute haemorrhagic oedema of infancy, a benign variant of leucocytoclastic vasculitis. Acta Paediatrica, Int J Paed[Internet]. 1996 [cited 2020 Aug 26];85(1):114-17.
8. Saraclar Y, Tinaztepe K, Adaliolu G, Tuncer A. Acute hemorrhagic edema of infancy (AHEI)-A variant of Henoch-Schönlein purpura or a distinct clinical entity? The Journal of Allergy and Clinical Immunology [Internet]. 1990 Oct 1 [cited 2020 Aug 26];86(4 PART 1):473-83.
9. Chesser H, Chambliss JM, Zwemer E. Acute Hemorrhagic Edema of Infancy after Coronavirus Infection with Recurrent Rash. Case Reports in Pediatrics [Internet]. 2017 [cited 2020 Aug 26];2017:1-3.