Acute haemorrhagic oedema of infancy as a manifestation of COVID-19

Bárbara Martins Saraiva 1, Mariana Bento Lobato, Elsa Santos, Ana Margarida Garcia 1

DESCRIPTION

Several cutaneous manifestations have been seen to be associated with SARS-CoV-2 infection since the beginning of the pandemic. 1–3 Acute haemorrhagic oedema of infancy (AHEI) is a vasculitis that is expressed in the first 2 years of life; it is characterised by purpuric lesions in the face, arms and legs, and is associated with oedema of the extremities. The intensity of the lesions contrasts with the benign course and good prognosis of this disease. 4 5

A 14-month-old boy with a previous history of vesicoureteral reflux and recurrent pyelonephritis presented to the emergency department with a 2-day history of fever and vomiting. Lab work showed leucocytosis (21.95 × 10⁹/L), neutrophilia (11.55 × 10⁹/L), mild thrombocytopenia (172 × 10⁹/L), elevated C reactive protein (221.8 mg/L) and normal procalcitonin (0.14 ng/mL). Urine test showed leucocyturia (237 U/L) but nitrites were negative. Therapy with cefuroxime and gentamycin was started intravenously. Although with no epidemiology or respiratory symptoms, SARS-CoV-2 was detected by reverse transcription PCR (RT-PCR) in nasopharyngeal secretions during the preadmission screening. Urine and blood cultures were negative, and chest X-ray and renal ultrasound were normal. Favourable evolution was observed, and the infant was discharged 7 days later under cefuroxime antibiotic therapy.

The next day, palpable maculopapular and purpuric lesions with perilesional erythema were observed, beginning in the face with progressive extension to ears, abdomen, chest (figure 1), limbs, hands, and feet; this was followed by oedema of the extremities (figure 2). Large bruise-like lesions in the arms and limbs and small purpuric lesions in the face were not blanchable regarding vitreous pressure. The lesions were neither painful nor pruritic. No other symptoms were reported. Lab work showed leucocytes 13.34 × 10⁹/L, elevated C reactive protein 80 mg/L, sedimentation rate 74 mm/hour and D-dimers 846 ug/L. RT-PCR for SARS-CoV-2 remained positive. All other respiratory viruses tested by PCR were negative. Regression of rash and oedema was observed in 3 days with full recovery after 2 weeks, only with an antihistaminic. Exclusion of allergic reaction to cefuroxime was confirmed by an oral provocation test, performed with standardised doses adjusted to the child’s weight; this test was negative.

Because of the age, purpuric characteristics, swelling, localisation of the lesions (extremities, face and ears) and benign course without intern organ involvement, AHEI was the most probable diagnosis. 5

Nevertheless, a differential diagnosis of Sweet syndrome (characterised by fever, neutrophilia and red plaques) should be considered. However, as this syndrome, usually rare in children, presents with
painful tender plaques, papules and pustules, frequently associated with inflammatory disorders and malignancies, we ruled out this diagnosis. Finally, although there were some similarities with urticarial vasculitis, the fact that the lesions were non-pruritic, and there were no circumscribed weals with a white centre and only residual transient hyperpigmentation, we ruled out this last diagnosis and assumed AHEI vasculitis.

This case describes the association of AHEI to SARS-CoV-2 infection as an atypical presentation of COVID-19. Therefore, this aetiology must be considered during the differential diagnosis of purpuric exanthema.

<table>
<thead>
<tr>
<th>Learning points</th>
</tr>
</thead>
<tbody>
<tr>
<td>► Cutaneous lesions are an atypical manifestation of COVID-19 in children.</td>
</tr>
<tr>
<td>► SARS-CoV-2 infection must be considered in the differential diagnosis of purpuric exanthema, such as acute haemorrhagic oedema of infancy.</td>
</tr>
</tbody>
</table>

Contributors BMS contributed substantially to the conception and design of the clinical case, analysed and interpreted it, and wrote the draft. MBL and ES critically revised the clinical case and included important intellectual content. AMG contributed to the design of the clinical case, took the pictures of the patient and critically revised the clinical case. All authors approved the final version submitted. BMS obtained the signature in the consent form from the caretaker of the child.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Parental/guardian consent obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

This article is made freely available for use in accordance with BMJ’s website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

ORCID ID Bárbara Martins Saraiva http://orcid.org/0000-0003-2771-9464

REFERENCES
5 Michael DJ. Acute hemorrhagic edema of infancy. dermatology online Journal, 2006. Available: https://escholarship.org/uc/item/3sr5m37