Future of Pediatrics: Blisters, Hives and Other Tales from the Emergency Room

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Disclosures

I have no relevant financial relationships to disclose.

I will be discussing off-label use of medication.

Objectives

(1) To identify common pediatric rashes that feature hives or blisters.

(2) To treat urticarial and blistering rashes that present urgently to the clinic or emergency room.

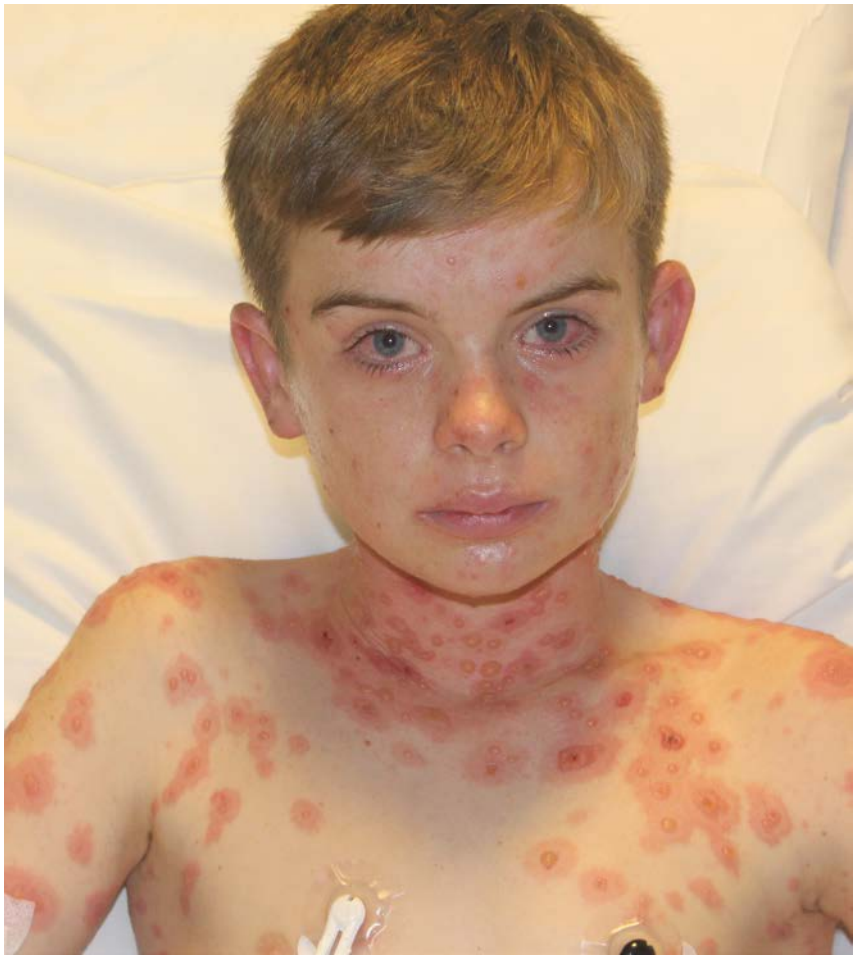
Case 1

- 14-year-old previously healthy male returning from Spanish camp with rash, fever, mucositis and conjunctivitis

Meds: None

PMH: Fully vaccinated

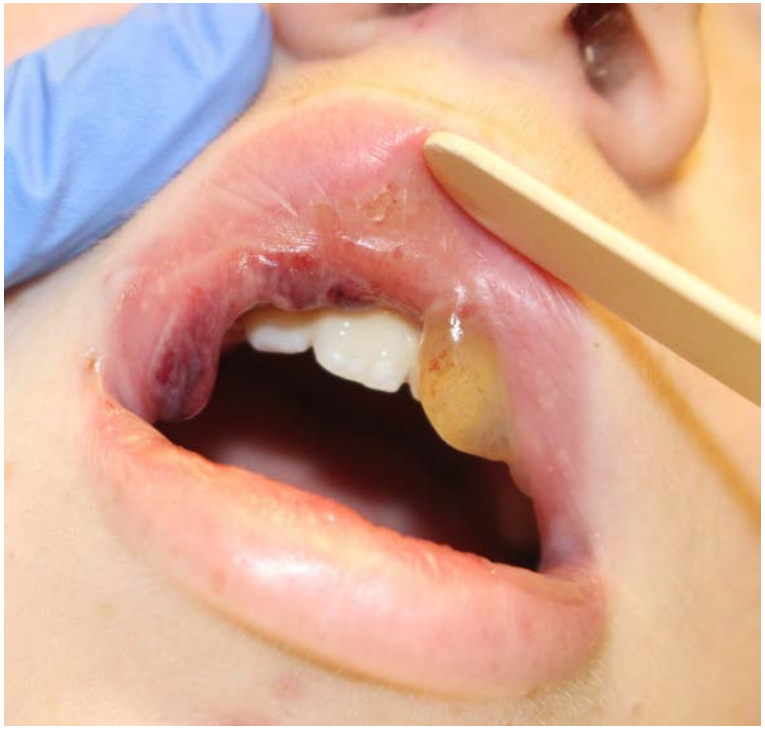
Imaging: Left lower lobe opacity on CXR

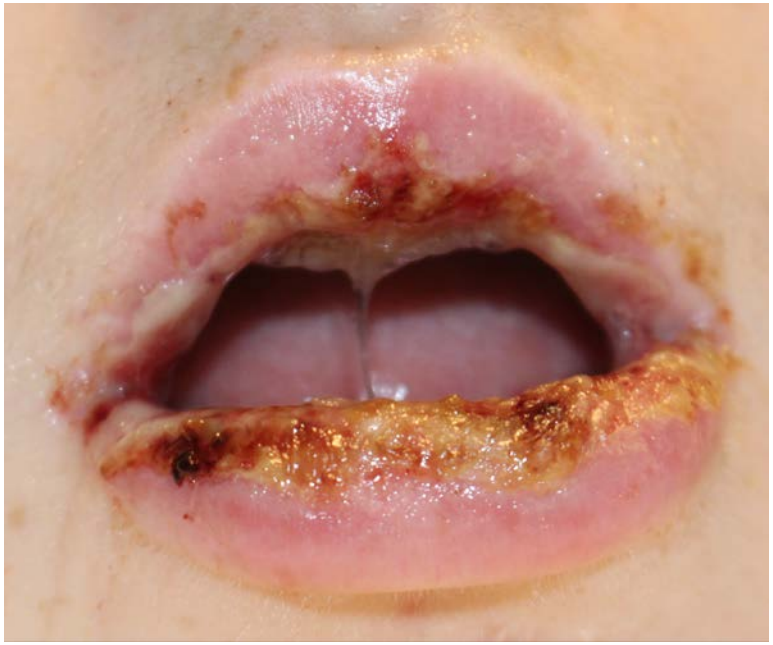


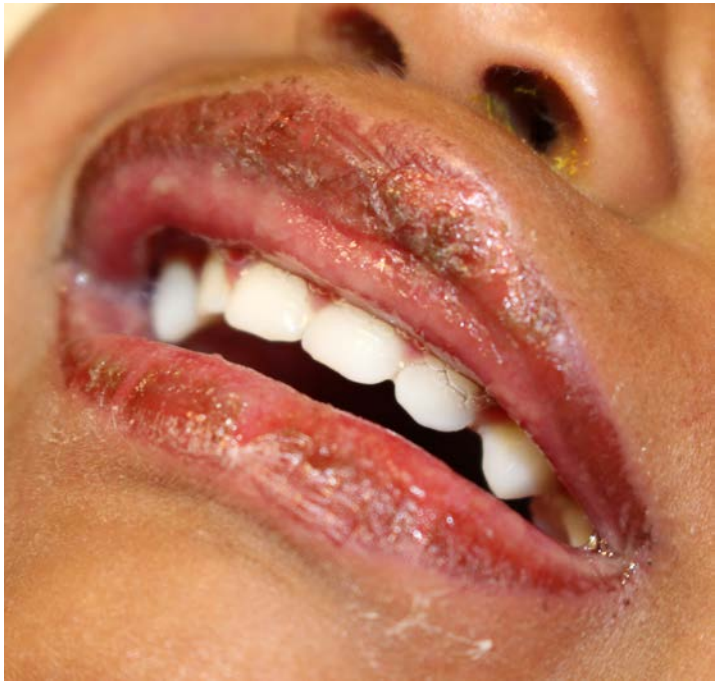
Mycoplasma-induced Rash and Mucositis (MIRM)

- Patients are predominantly young and male
- Prodrome nearly universal
- Cutaneous involvement variable
  - Mucositis without rash
  - Mucositis + scant rash
  - Mucositis + extensive rash (SJS-like)
- Excellent prognosis

Canavan TN, Mathes EF, Frieden I, Shinkai K. Mycoplasma pneumoniae-induced rash and mucositis as a syndrome distinct from Stevens-Johnson syndrome and erythema multiforme: a systematic review. J Am Acad Dermatol. 2015 Feb;72(2):239-45.





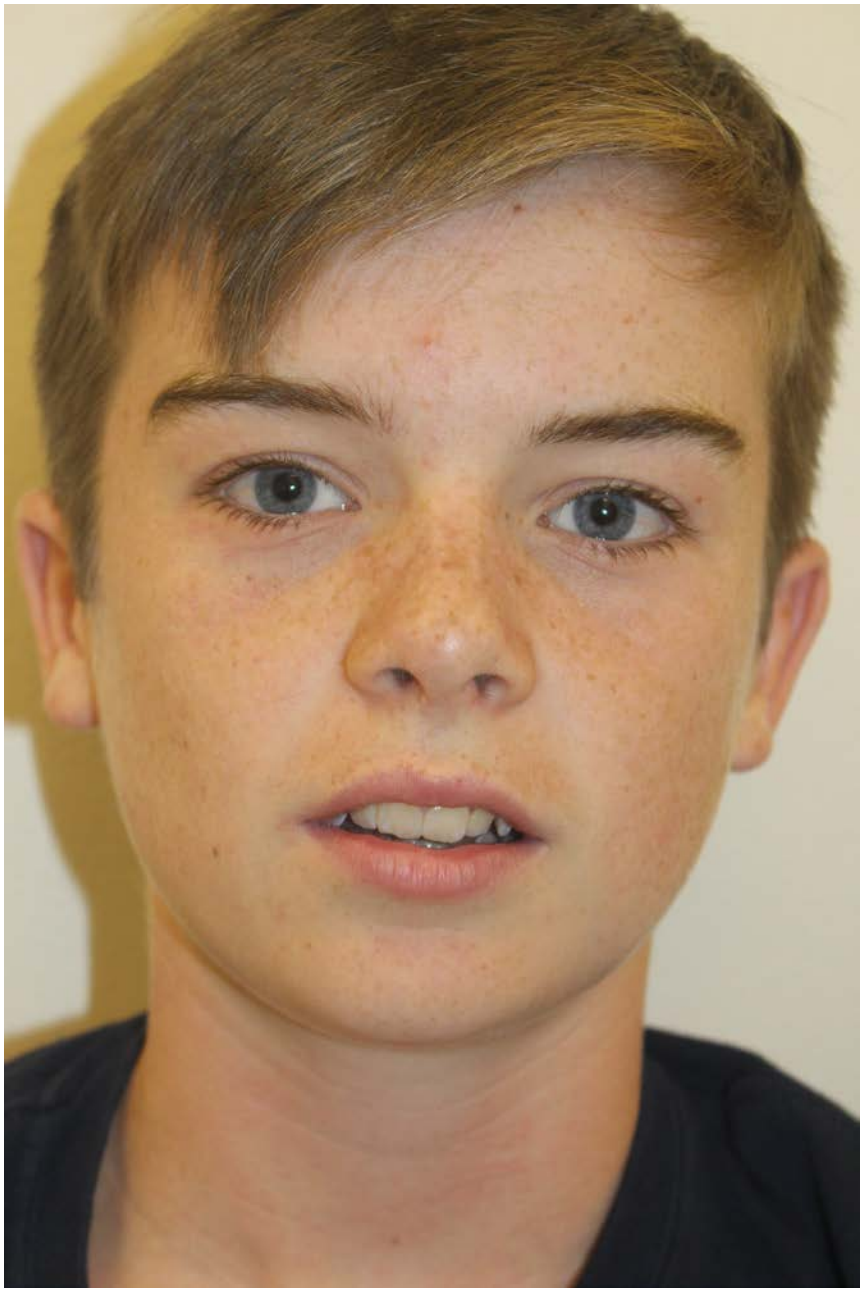


Treatment

- Early consultation of dermatology, ophthalmology, urology
- Supportive care
- Antibiotics
  - Prevent neurologic and pulmonary sequelae
  - Effect on mucocutaneous complications unknown
- Immunosuppression
  - Corticosteroids, IVIG, Cyclosporine

MIRM: Take Home Points

	EM	SJS/TEN	MIRM
Demographic	Young, Male	Adult	Young, Male
Trigger	HSV	Drug	Mycoplasma
Distribution	Acral	Generalized	Varies
Morphology	Targets	Atypical Targets	Polymorphous
Mucositis	Rare	Always	Always
Sloughing	No	Always	Rare
Recurrence	Common	Rare	Occasional (8%)
Prognosis	Excellent	Mortality: Adults: 5-15% Children: 2%	Excellent

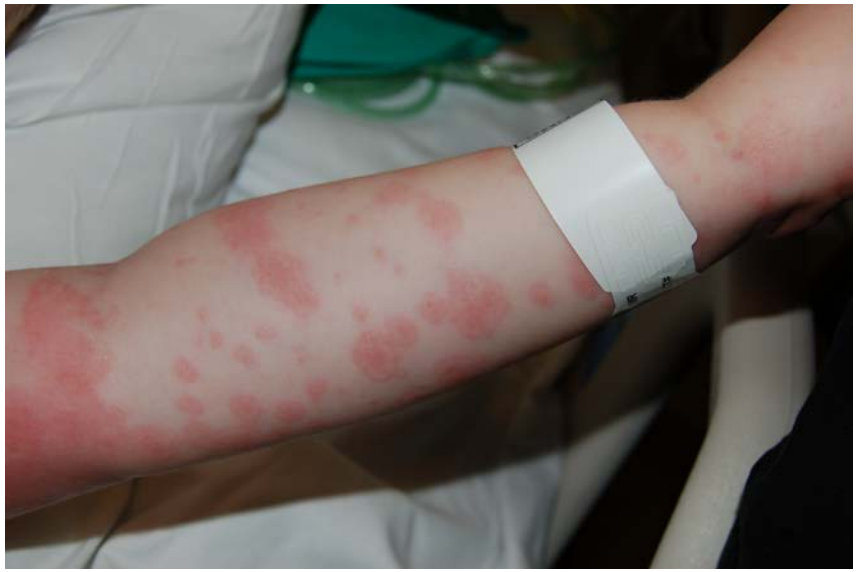


Case 2

- 8-year-old female with a history of otitis media treated with amoxicillin
- She presents with fever, acral and facial edema and a skin rash

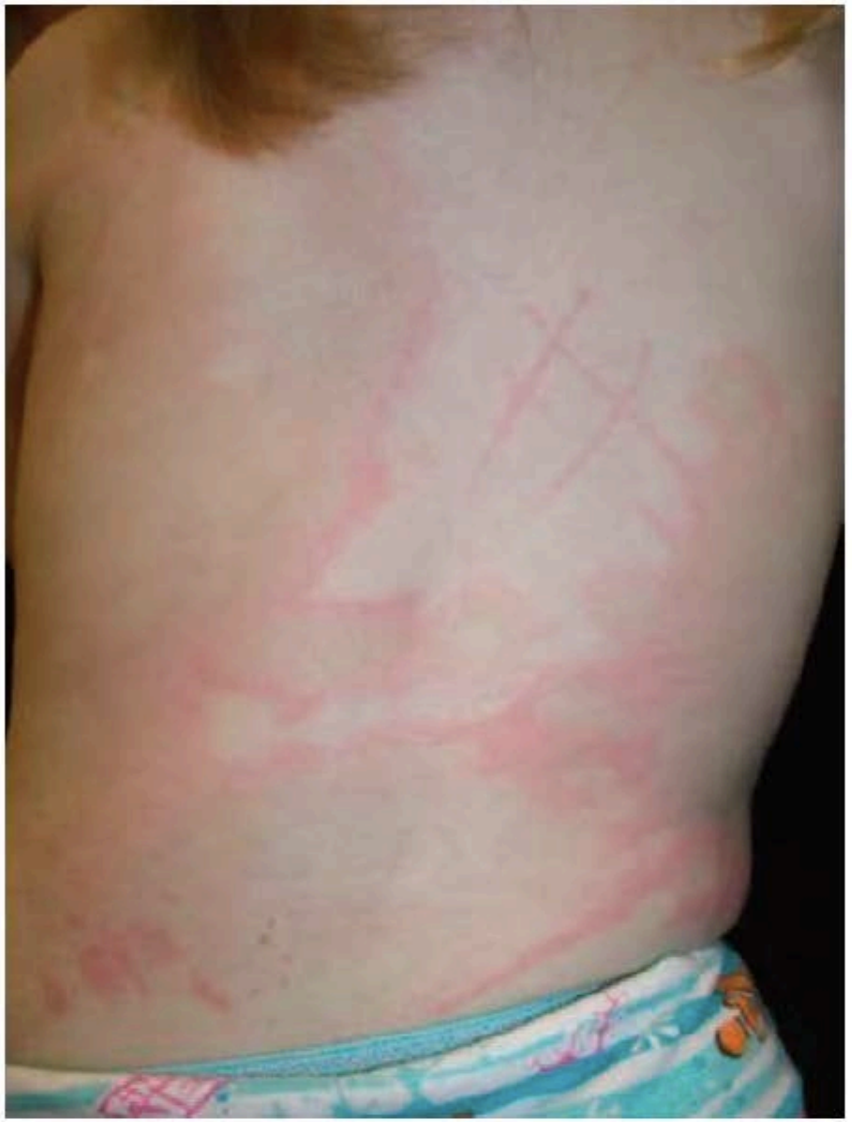
Meds: Amoxicillin

PMH: Fully vaccinated



Urticaria Multiforme

- Acute, annular urticaria
- Often misdiagnosed as **erythema multiforme** or less commonly **serum sickness-like reaction**
- Dusky central hue resembles purpura but resolves with anti-histamines
- Associated angioedema of the face, hands, and feet represents subcutaneous vascular leak with resultant dermal edema



Shah KN, Honig PJ, Yan AC. "Urticaria multiforme": a case series and review of acute annular urticarial hypersensitivity syndromes in children. Pediatrics. 2007 May;119(5):e1177-83.

	Urticaria Multiforme	Erythema Multiforme	Serum Sickness-Like Reaction
Appearance of Lesions	Annular + polycyclic, +/- purpura	Classic targets	Annular + polycyclic, +/- puprura
Location	Trunk, Extremities, Face	Acral	Trunk, Extremities, Face
Fixed	No	Yes	Yes
Mucous Membranes	Oral edema No erosions	+/- Erosions, mucositis	Oral edema No erosions
Facial or Acral Edema	Common	Rare	Common
Associated Sx	Pruritus	Pruritus Rare	Myalgia, Arthralgia
Trigger	Viral illness, Antibiotics, Immunizations	HSV	Antibiotics

Shah KN, Honig PJ, Yan AC. "Urticaria multiforme": a case series and review of acute annular urticarial hypersensitivity syndromes in children. Pediatrics. 2007 May;119(5):e1177-83.

Treatment

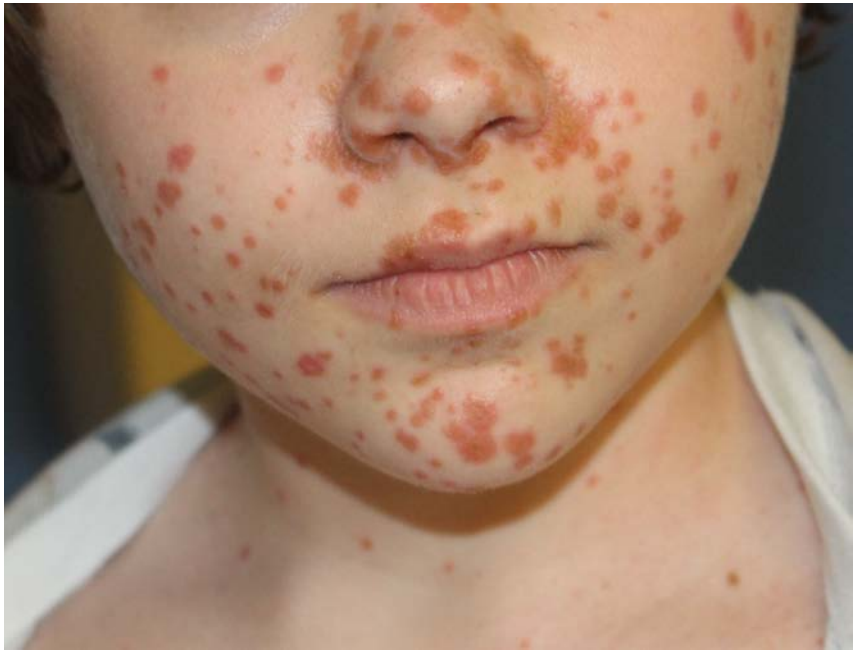
- Discontinue unnecessary antibiotics
- H1 + H2 antihistamines
- Corticosteroids only in refractory or severely symptomatic cases

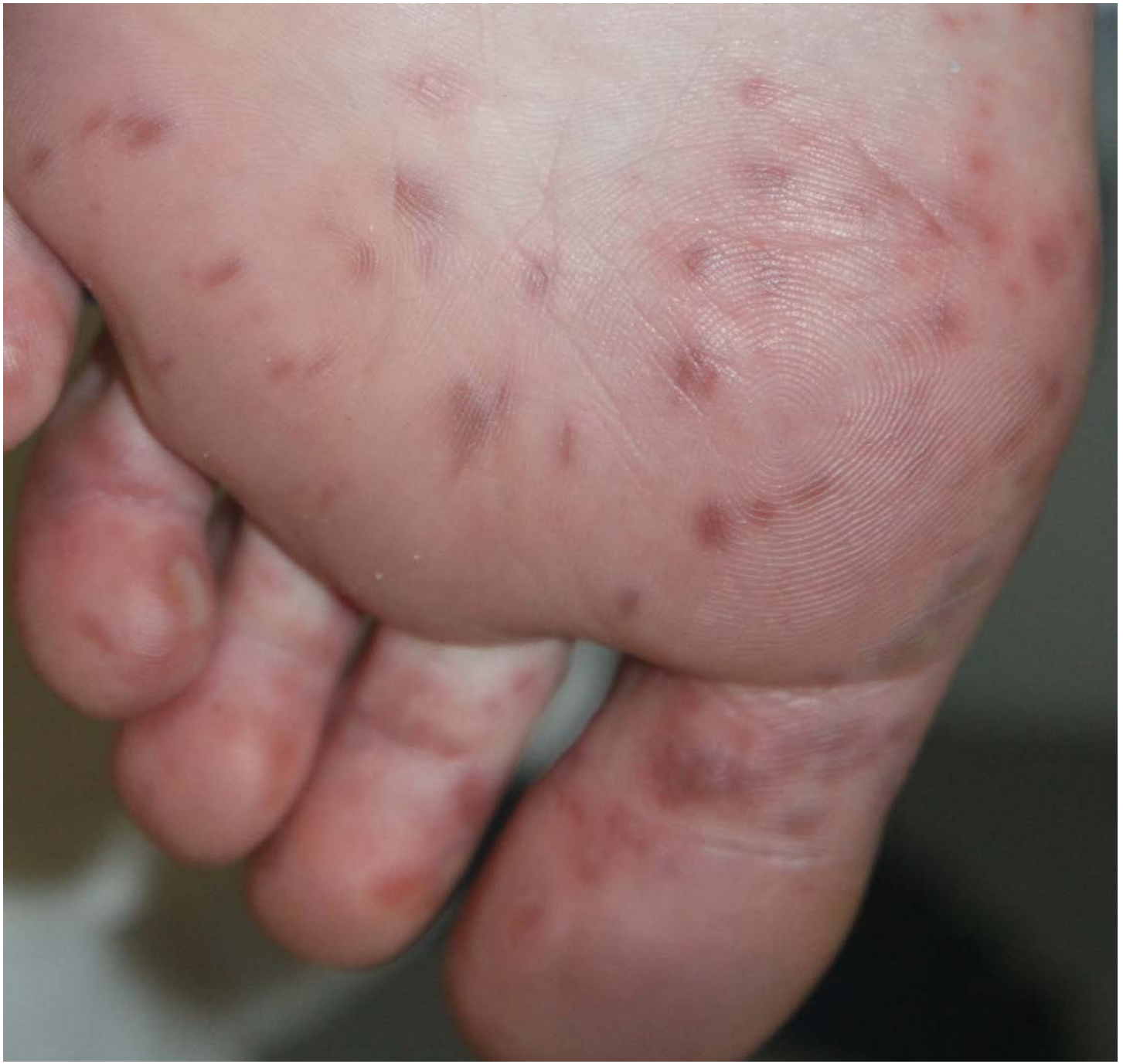
Case 3

- 13-year-old male who is afebrile, feels well and is eating and drinking with a diffuse crusted and blistering rash
- Several classmates have had a rash recently

PMH: Fully vaccinated

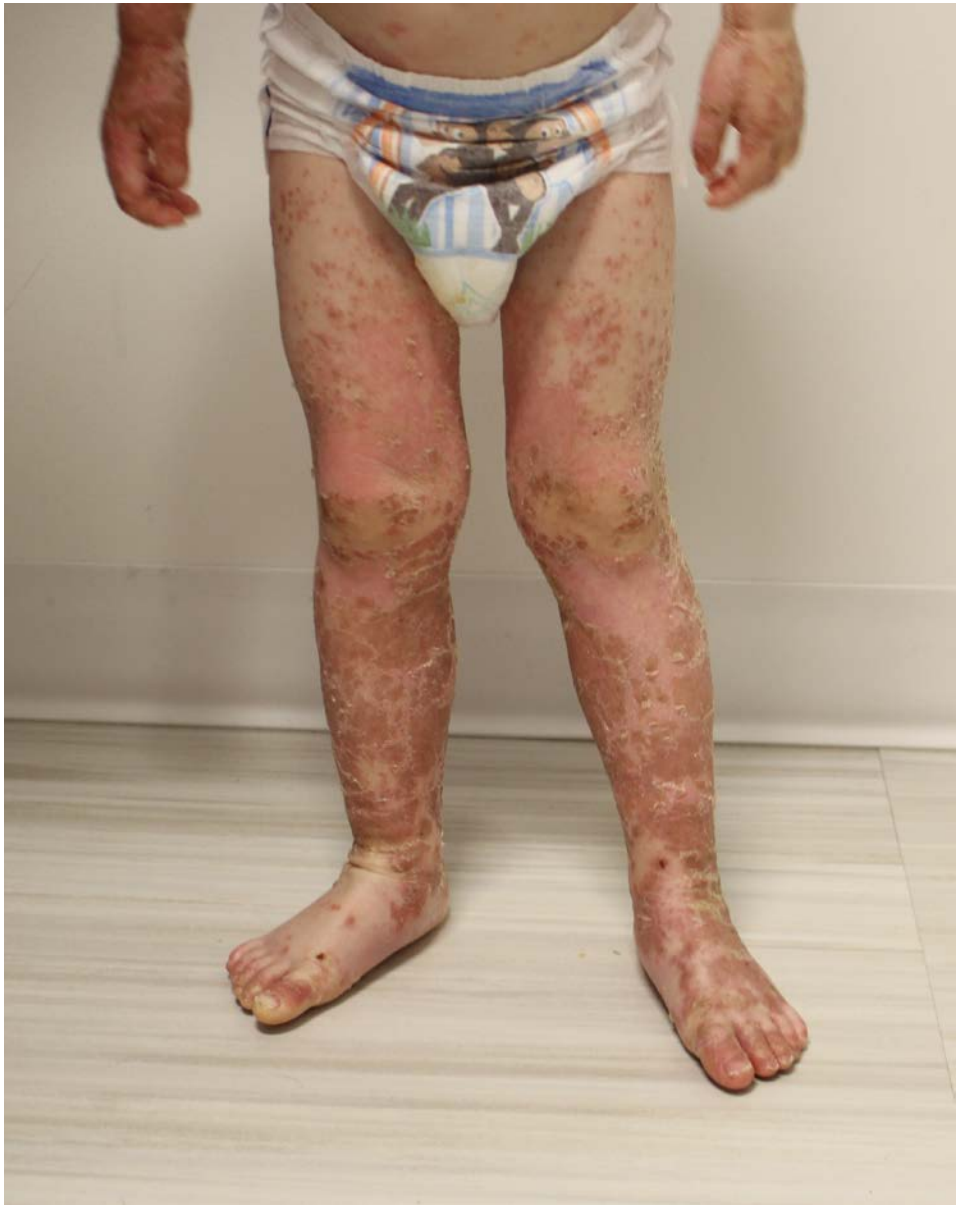
Meds: None

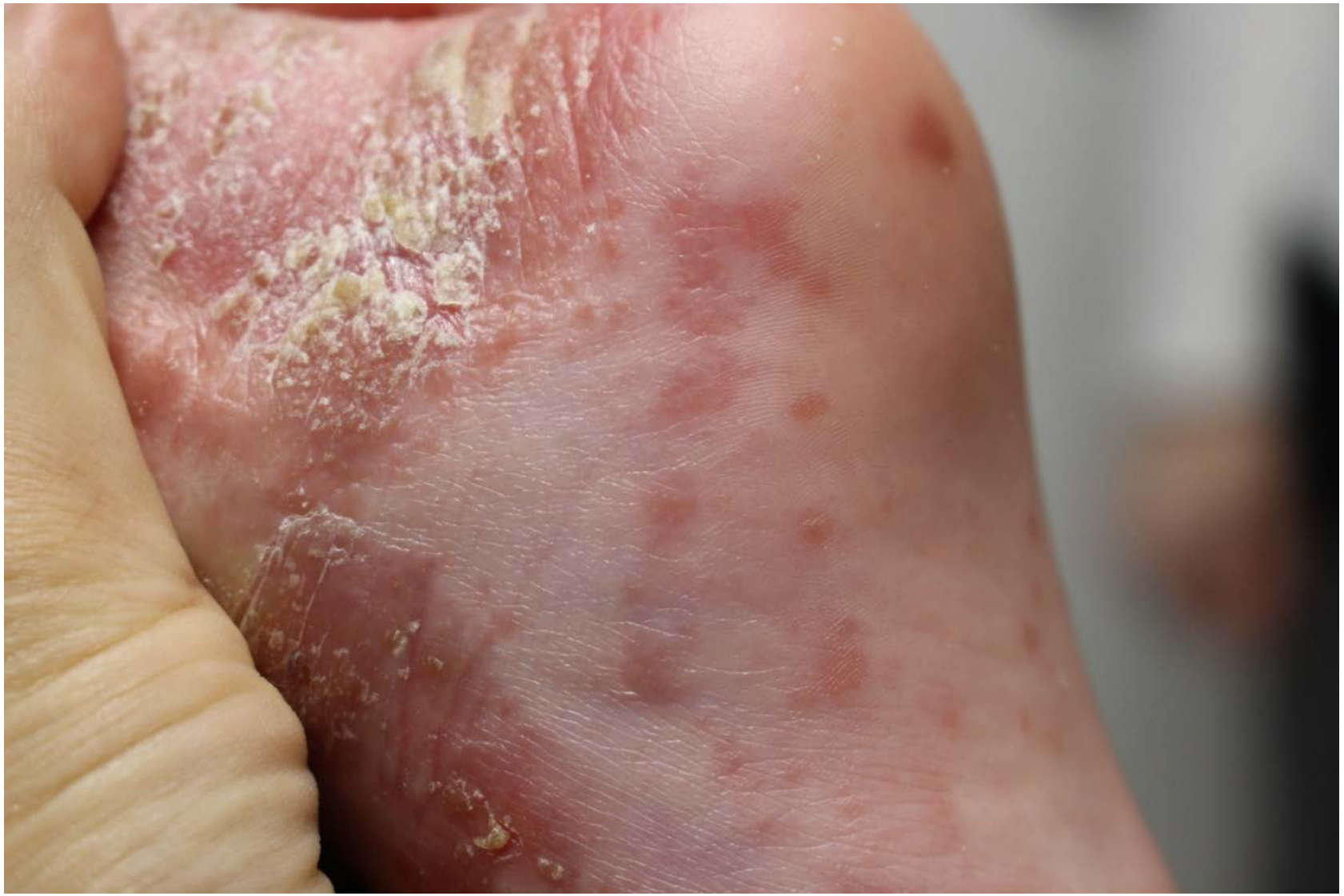


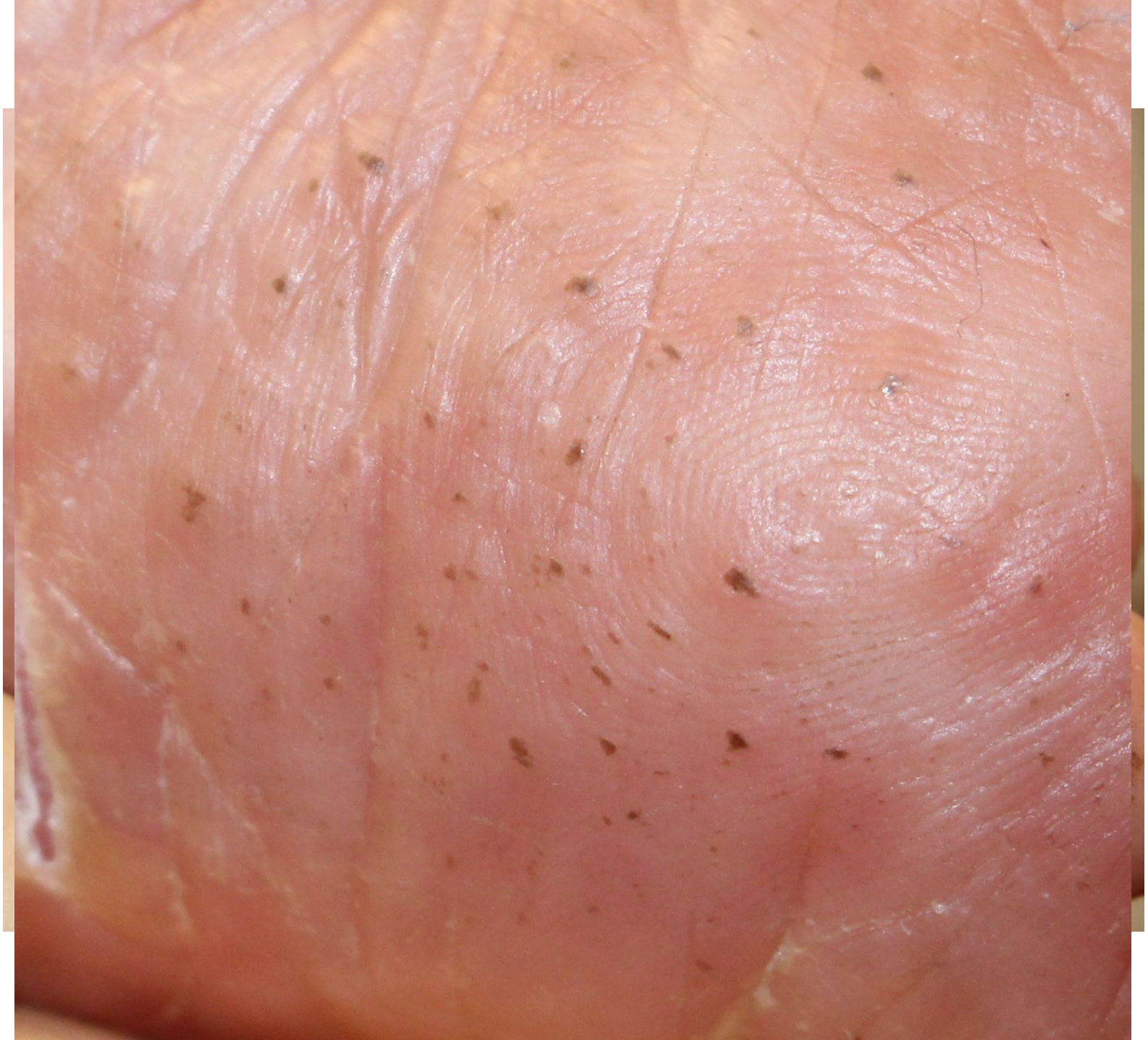


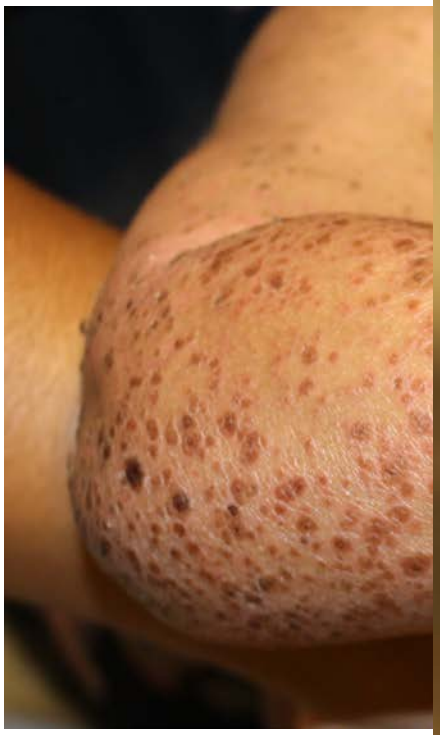
Atypical Coxsackie Exanthem

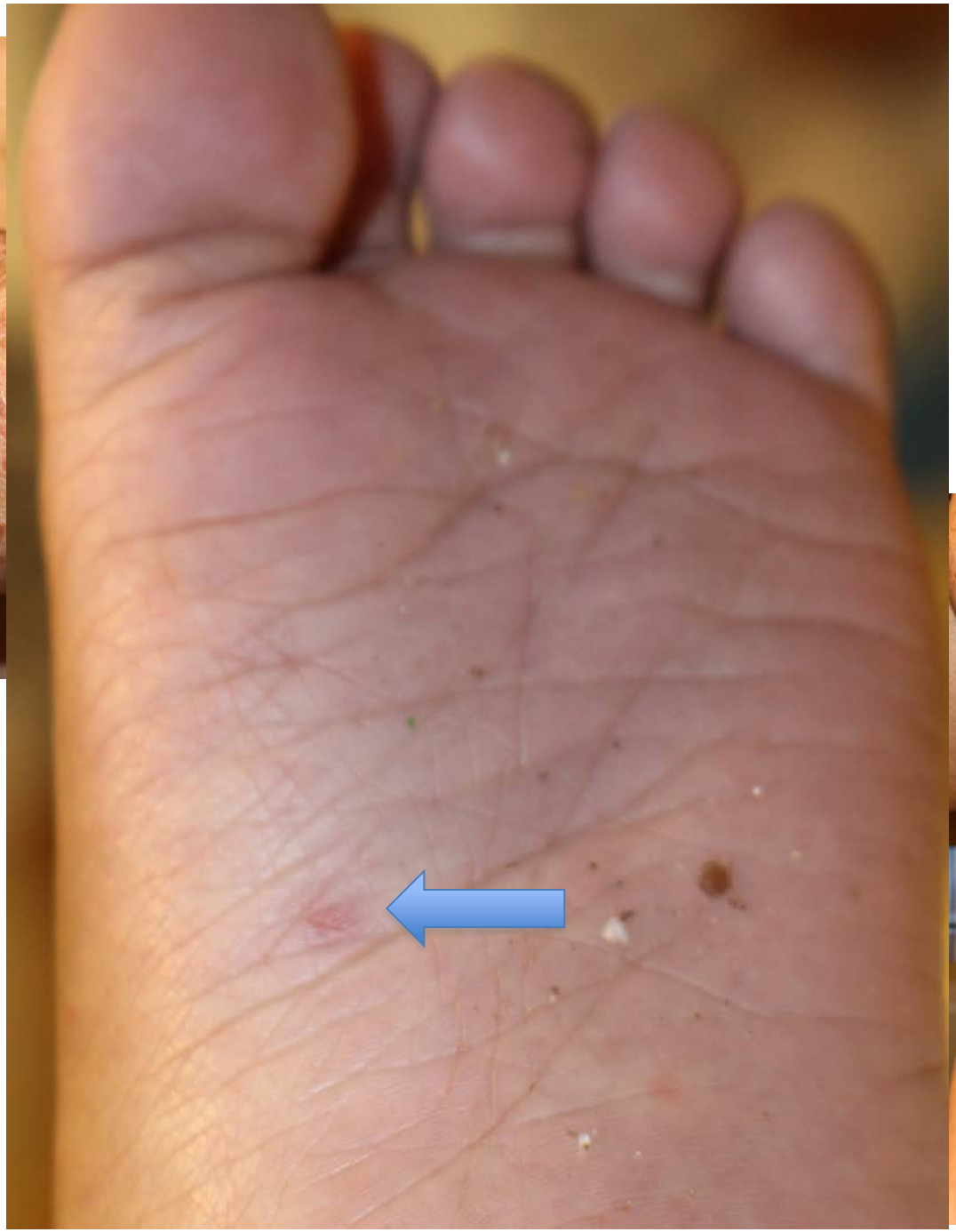
- Coxsackie A6
- Cases first reported in Asia in 2008 and now endemic worldwide
- Widespread distribution of vesiculobullous lesions +/- typical acral and oral lesions
- Adults can have serious infections
- Onychomadesis following infection is common

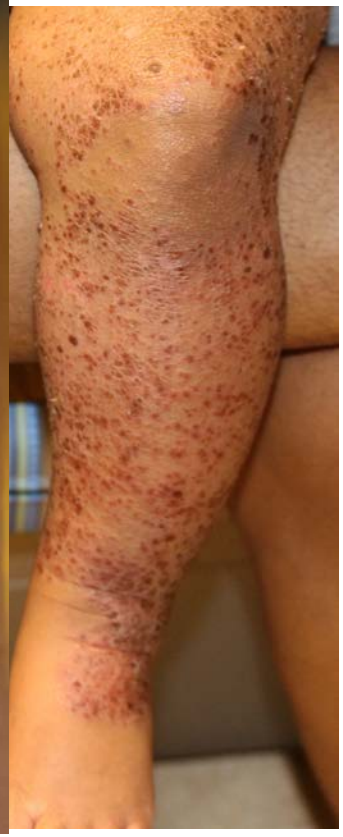










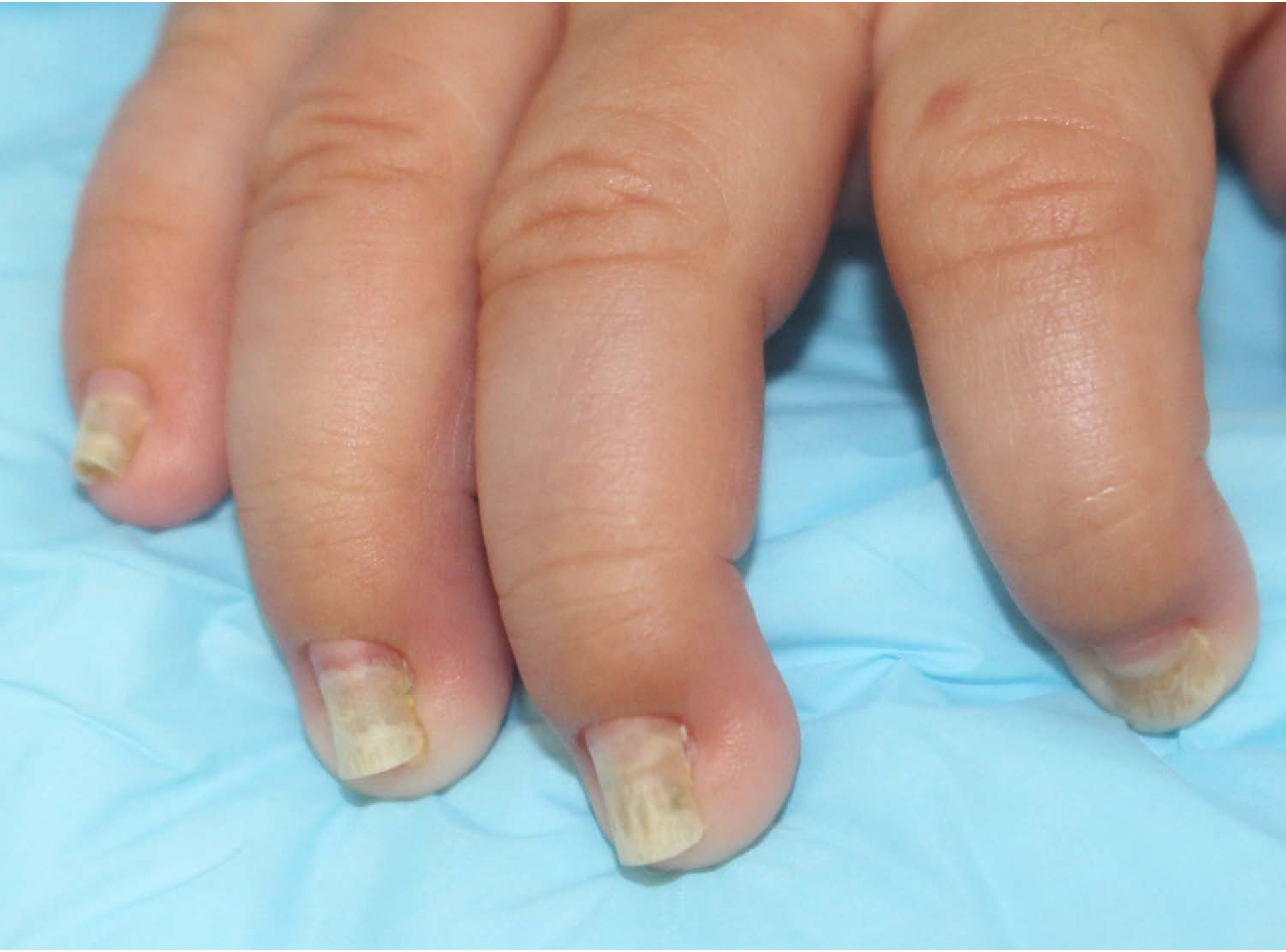


	Classic	Atypical
Age >5 years	Rare *	+
Temperatures >38°C	+	++
Intraoral rash	+++	+
Rash on palms and soles	+++	+
Rash on dorsal hands and feet	+	+++
Rash on calves and forearms	+	+++
Rash on neck and trunk	+	+++
Rash ulcerates and scabs	Rare *	+++
Bullae present	Rare *	++
Onychomadesis	+	++

Feder HM Jr, Bennett N, Modlin JF. Atypical hand, foot, and mouth disease:
a vesiculobullous eruption caused by Coxsackie virus A6. Lancet Infect Dis. 2014 Jan;14(1):83-6.

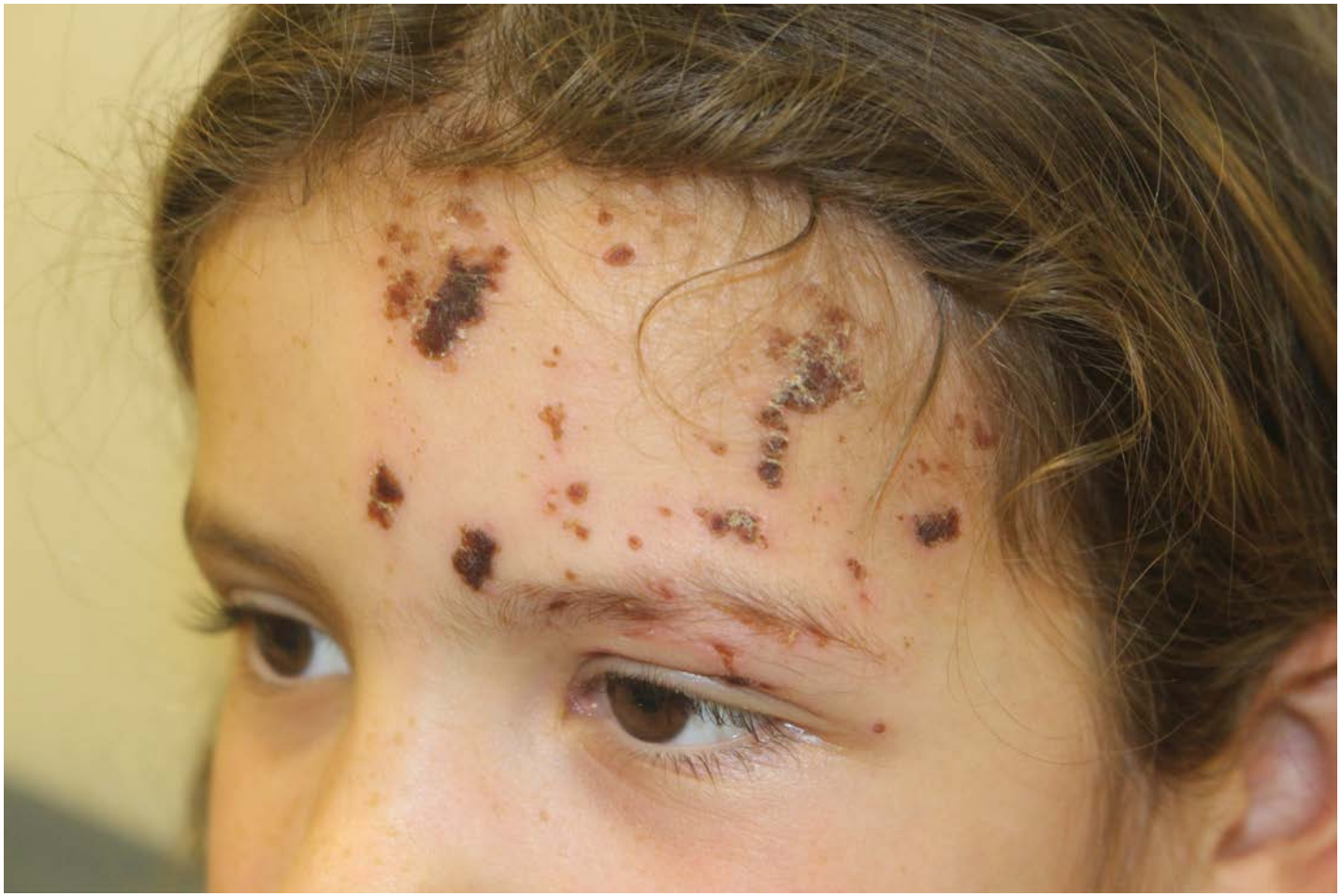
Workup & Treatment

- PCR from an intact vesicle for HSV, VZV and Enterovirus panel
- Empiric acyclovir until results of HSV/VZV PCR are available
- Supportive care



Case 4

- 7-year-old female treated for poison ivy with oral prednisolone then with clindamycin for periorbital cellulitis
- Referred to ophtho for worsening periorbital swelling
- Meds: Prednisolone, Clindamycin
- PMH: Fully vaccinated



Herpes Zoster (Shingles)

- Rare in children
- Can be due to reactivation of wild type virus or vaccine Oka strain virus
  - Send VZV PCR to CDC
- Delay in diagnosis can result in complications
- Treatment: acyclovir 80mg/kg/day divided 4 times daily for 7 days

Summary

- Mycoplasma-induced rash and mucositis may be distinct from SJS
  - Mucocutaneous predominance, scant skin lesions
- Urticaria multiforme is NOT EM
  - Skin lesions are NOT fixed
  - Responds to anti-histamines
- Atypical coxsackie may now be typical
  - Diffuse skin lesions + often onychomadesis
- Herpes zoster occurs in healthy kids

Questions?

- Email: akirkori@childrensnational.org