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IMAGING CASES

Vesicle and bullae eruption

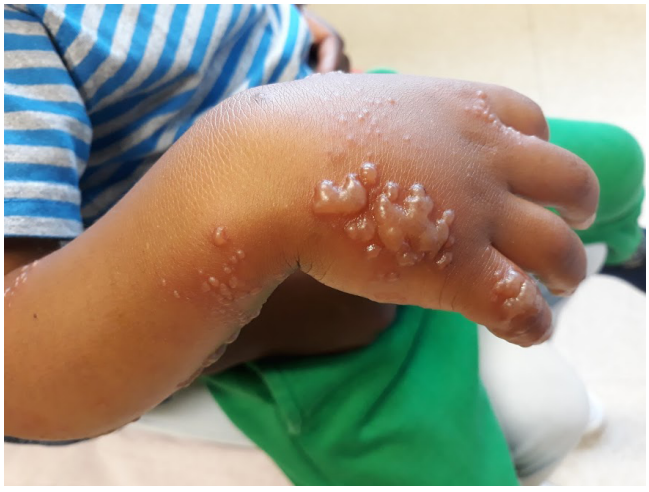
Erupção vesicular e bolhosa

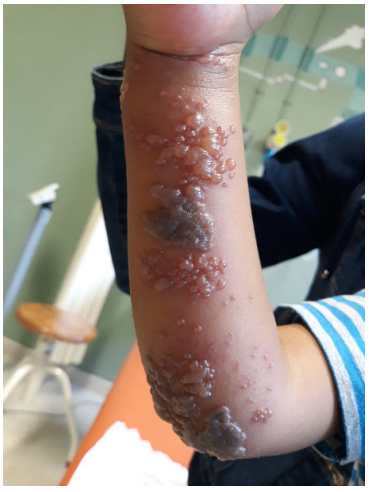
Mariana Lopes Costa[1], Maria Manuel Zarcos[1], Felicidade Santiago[2]

A previously healthy three-year-old boy was admitted to the Emergency Department with lesions extending from the cubital face of the right forearm to the fourth and fifth fingers with four days of evolution. The lesions started in the elbow and evolved progressively to the forearm and hand. The boy had started amoxicillin/clavulanic acid (50 mg/kg/day three times daily [TID]) in the previous two days, with no improvement. Lesions were very pruriginous vesicles, with some tense bullae with serous hematic content and necrotic lesions in the forearm. No associated pain, fever, or other symptoms were reported. There was no prior history of trauma, infection, medication, personal or family history of varicella (the mother denied exposure or disease during pregnancy), or any other previous rash or relevant history. The boy had normal growth and development and vaccines according to the national vaccination program, without any extra vaccines. No other child in his school reported similar lesions or other symptomatology.

The physical examination was normal, except for the reported lesions (**Figures 1** and **2**). After requiring the collaboration of the Dermatology Department for the diagnosis, the child was admitted to the Pediatric Department for treatment.

What is your diagnosis?





Figures 1 and 2 – Bullous eruptions with four days of evolution at presentation

1. Department of Pediatrics, Centro Hospitalar de Leiria. 2410-197 Leiria, Portugal. mariana.costa@chleiria.min-saude.pt; maria.zarcos@chleiria.min-saude.pt
2. Department of Dermatology, Centro Hospitalar de Leiria. 2410-197 Leiria, Portugal. felicidade.santiago@chleiria.min-saude.pt

DIAGNOSIS

Herpes zoster infection

DISCUSSION

The clinical characteristics and linear location of vesicles and bullous lesions in C7-C8 dermatomes in the present case suggested the diagnosis of varicella-zoster virus (VZV) infection. Vesicle content was aseptically obtained to perform polymerase chain reaction (PCR) for VZV identification, which was positive. Intravenous acyclovir (200 mg TID) was administered for seven days, with gradual lesion regression (**Figure 3**).

VZV is a DNA virus that causes generalized pruritic craniocaudal microvesicular exanthema (varicella or chickenpox) in the primoinfection, evolving to stages that can be simultaneously observed and may include vesicles, pustules, and scabs. This primoinfection may occur during pregnancy and be subclinical. Afterward, the virus remains latent in the neural ganglia.[1,2] VZV can reactivate in cases of immunosuppression, usually in the form of zoster, but also as a vasculopathy, myelopathy, encephalitis, cerebellitis, or *zoster sine herpete*.[3,4] Reactivation in children is rare and most usually (but not exclusively) observed in immunocompromised children or associated with local trauma.[3,4]

As described in this case, VZV reactivation is usually a dermatome-limited vesicular and pruritic eruption. Intercostal dermatomes are mainly affected, but all dermatomes can be involved, and satellite lesions may also arise.[2,5] Only one dermatome is usually involved, especially in immunocompetent patients, but there are reports of multiple dermatomes affected at the same time.[3,6] Rarely, vesicles evolve into blisters, bullae, or pustules.[1] Fever and local pain may be associated, as well as paresthesia, but younger children may present no associated symptoms.[1,3] Lesions usually regress (often spontaneously) within seven to ten days in immunocompetent children, taking longer (and presenting more exuberant symptoms) in immunocompromised ones.[6] The diagnosis is usually clinical, but PCR for VZV, serologic test, or even viral culture may also be used for diagnostic purposes. Due to its sensitivity, positive VZV PCR identification is considered the gold standard.[6,7]

Treatment is administered to reduce the severity and duration of eruptions.[7] Some studies refer that treatment also reduces the risk of post-herpetic neuralgia, but there is no consensus regarding that.[7] Acyclovir or valacyclovir may be used, with favorable outcomes, especially when initiated early (i.e., within the first 72 hours). Oral acyclovir in the dose of 20-40 mg/kg (until a maximum of 800 mg/dose) four to five times a day for seven to ten days may be an option, as well as oral valacyclovir in older children (until the maximum of 2 g TID).[2,3,7] In cases of severe disease, ocular zoster, or risk of disseminated disease, endovenous acyclovir is preferred, in the dose of 5-20 mg/kg (usually 10 mg/kg or 500 mg/m^2) TID for seven to ten days.[4]

This case intends to alert for the differential diagnosis of vesicle and bullous eruptions. The location of lesions is unusual (with more frequent involvement of the torso and abdomen), as well as their exuberant presentation and extension. Although young age and absence of personal history of varicella (the mother denied varicella during pregnancy) or other exanthematic diseases in the past may be confounders, the hypothesis of zoster should always be considered in the presence of similar lesions. Serologic evaluation was not performed in this case, being assumed that it was a reactivation of a subclinical primoinfection.

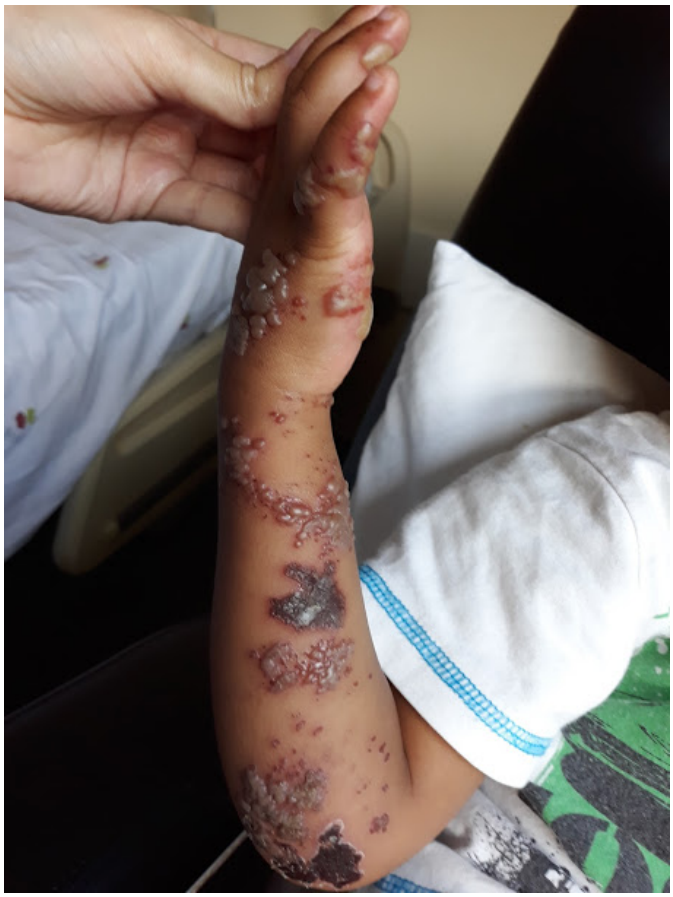


Figure 3 – Clinical improvement after six days of treatment with intravenous acyclovir

ABSTRACT

Varicella-zoster virus primoinfection, known as varicella or chickenpox, is very common in children. However, zoster reinfection is uncommon at this age, being sometimes associated with a history of varicella in the mother during pregnancy, child immunosuppression, or local trauma.

In this case report, the authors present an exuberant form of zoster infection in a three-year-old boy with no prior history of varicella.

Keywords: acyclovir; blister; exanthema; herpes zoster

RESUMO

A primoinfeção por vírus varicela-zoster, conhecida por varicela, é muito comum em crianças. Contudo, a reinfeção por zoster é rara na infância, estando por vezes associada a antecedentes de varicela na mãe durante a gravidez, imunossupressão da criança ou trauma local.

Neste relato de caso, os autores apresentam o caso de uma forma exuberante de infeção por zoster num rapaz de 3 anos sem história prévia de varicela.

Palavras-chave: aciclovir; bolha; exantema; herpes zoster

AUTORSHIP

Mariana Lopes Costa - Conceptualization; Data curation; Investigation; Visualization; Writing – original draft
Maria Manuel Zarcos - Conceptualization; Investigation; Resources; Supervision; Visualization; Writing – review & editing
Felicidade Santiago - Investigation; Resources; Supervision; Visualization; Writing – review & editing

REFERENCES

1. Quesada D, Morsky L, Aguiniga-Navarrete P, Garrett MB. Pediatric Herpes Zoster. Clin Pract Cases Emerg Med. 2020;4(1):32-4.
2. Yasuda R, Minami K, Ogawa A, Okada H, Terakawa R, Koike Y, *et al*. Herpes zoster and meningitis in an immunocompetent child: a case report. J Med Case Rep. 2019;13(1):182.
3. Hwang JH, Kim KH, Han SB, Kim HH, Kim JH, Lee SY, *et al*. A clinico-epidemiological multicenter study of herpes zoster in immunocompetent and immunocompromised hospitalized children. Clin Exp Vaccine Res. 2019;8(2):116-23.
4. Komitova RT, Boykinova OB, Stoyanova NS. The Skin and the Eye - Herpes Zoster Ophthalmicus in a Healthy 18-month-old Toddler. Folia Med (Plovdiv). 2018;60(1):170-4.
5. Yan C, Laguna BA, Marlowe LE, Keller MD, Treat JR. Herpes zoster duplex bilateralis in an immunocompetent adolescent boy: a case report and literature review. Pediatr Dermatol. 2014;31(3):341-4.
6. Peterson N, Goodman S, Peterson M, Peterson W. Herpes zoster in children. Cutis. 2016;98(2):94-5.
7. Katakam BK, Kiran G, Kumar U. A Prospective Study of Herpes Zoster in Children. Indian J Dermatol. 2016;61(5):534-9.

CORRESPONDENCE TO
Mariana Lopes Costa
Department of Pediatrics
Centro Hospitalar de Leiria
Rua das Olhalvas
2410-197 Leiria
Email: mariana.costa@chleiria.min-saude.pt

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