International Journal of Research in Dermatology
Arismendi JLM et al. Int J Res Dermatol. 2022 Sep;8(5):504-507
http://www.ijord.com

DOI: https://dx.doi.org/10.18203/issn.2455-4529.IntJResDermatol20222049

Case Report

Cutaneous manifestations of COVID-19: a case report and review of the literature

José Luis Martínez Arismendi, José Maria Zepeda Torres, Felix Osuna Gutierrez*, Laura Fischert Melendez, Grecia Jazmín Gutiérrez García, Paola Lizette Padilla

Hospital General Regional #110 Instituto Mexicano del Seguro Social, Guadalajara, Jalisco, Mexico

Received: 10 July 2022
Accepted: 25 July 2022

***Correspondence:**
Dr. Felix Osuna Gutierrez,
E-mail: felixosuna10@hotmail.com

ABSTRACT

Since the onset of the SARS-Cov2 pandemic, new data and peculiarities have emerged within the range of manifestations caused by this virus. Multisystem inflammatory syndrome in children (MIS-C) affects a small percentage of pediatric patients infected with SARS CoV 2 and characterized by fever, lab evidence of inflammation, multisystem involvement, and severe illness requiring hospitalization. Cutaneous findings are often present in these patients and are notable for their heterogeneity and poor characterization. We present case of pediatric patient with COVID-19 and cutaneous manifestations consistent with a multisystem inflammatory syndrome.

Keywords: Skin, Manifestations, COVID-19, Case report

INTRODUCTION

Since the beginning of the SARS CoV-2 pandemic, new data and particularities have emerged within the range of manifestations caused by this virus. What was initially thought to be an agent whose effects were limited to lung tissue is now known to be a virus capable of infecting and damaging any tissue in the body, as well as generating proinflammatory states that persist even when the viral infection has been controlled.[1-3]

In general, at the beginning of the pandemic, it was believed that the severity of the clinical manifestations of the virus increased with the age of the patient, with the initial incidence of cases with moderate to severe symptomatology in children aged 0-19 years being between 0.9-1.2%.[1] However, in recent months, an increase in symptomatic infections in pediatric patients (0-17 years) has been observed, contrasting with the beginning of the pandemic.[4]

Multisystem inflammatory syndrome in children (MIS-C) affects a small percentage of pediatric patients infected with SARS CoV-2 and characterized by fever, laboratory evidence of inflammation, multisystem involvement, and severe illness requiring hospitalization. Cutaneous findings are often present in these patients and are notable for their heterogeneity and poor characterization.[5]

We present the case of a pediatric patient with COVID-19 and cutaneous manifestations, consistent with a multisystemic inflammatory syndrome.

CASE REPORT

This is a 10-year-old male, who comes with his mother for presenting diffuse erythematous lesions of 5 days of evolution. By indirect interrogation, the mother reported the onset of symptoms on September 16, 2021 with rash on the left upper extremity with intense pruritus, which spread throughout the body, with general malaise, myalgia, arthralgia, occipital headache, VAS 4/10, without irradiation, nausea without vomiting, and 6 diarrheal evacuations due to diarrhea; nausea without vomiting; 6 diarrheic evacuations per day, and fever up to 40 degrees, predominantly at night between 10 pm and 5

am, which was partially relieved with paracetamol 500 mg VO. On Saturday he was referred to the paediatric emergency department for dyspnoea on slight exertion.

A: Allergies denied, M: Chlorphenamine, loratadine, paracetamol, avapena, metamizole, P: Asthmatic treated with salbutamol last crisis at 7 years of age. He has a complete vaccination schedule for his age (no vaccination booklet shown), RH Group O+, L: 20/09/2021 20:00 hrs approximately, apple and burrito, E: Refer to start classes on 07/09/2021, brother 14 years old COVID positive (08/08/2021), mother COVID positive (22/08/2021), grand mother COVID positive (29/08/2021).

On physical examination-weight 69 kg SC 1.77 (Max 1.73), BP: 97/60 mmHg HR: 100 HR: 27 TEMP: 36.9°C

Male patient, conscious, calm, oriented and cooperative, with mild dehydration, generalized erythema, dermal lesions of multiple morphology; in the thorax maculopapular and pinpoint, with traces of scratching, and some decapitated; cumular lesions with raised rim, erythematous, pruritic and pearly color; confluent in extremities, with edema of hands and feet; mild desquamation of hands; soles and palms are respected. Normocephalic, isochoric pupils, normoreflexic, without data of conjunctivitis or purulent discharge in lacrimals, permeable nostrils without hypertrophy of turbinates or secretions, oropharynx without data of erythema or infections, Ears with both auditory canals permeable, without lesions, tympanic membrane is unharmed, cylindrical neck, mobile, without palpable lymphadenopathies, chest normolinear with adequate movements of amplexion and amplexation, without data of respiratory distress. Lung fields well ventilated, without rales or wheezing, rhythmic prechordium, without auscultable murmurs. Abdomen globose at the expense of adipose panniculus, soft, depressible, not painful to superficial or deep palpation, no visceromegaly palpable, no data of peritoneal irritation, genitalia according to age and sex without dermal lesions, integral extremities, immediate capillary filling, distal pulses present of adequate intensity and frequency.

On 16/09/2021: Sars Cov 2 negative rapid antigen test and the lab findings were-BH: Hb: 12.8, hto-37.1, plt-293, leu-18.3, neu-84.5, linf-8.9, monos-5, eso-0.1, baso-0.1, TPS: Tp 13.9, tpt 11.4, inr-1.26, fibrinogen-668, DD-295, QS: glu-125, urea-30, bun-14, crt-0.4, PFH: amyl-33, ggt-340, prt-6.5, glob-2.9, alb-3.6, rel A/G-1.2, tgp-267, tgo-73, fa-287, CPK-20, mb-11, dhl-203, bt-0.56, bd-0.3, bi-0.26, PCR-36.7.

On 09/21/2021: Hb-12.9, Ht-38.2, platelets-289, leukocytosis-19.8, Neu-13.44, lymph-3.6, eosinophils-580, Smear immature granulocytic granulocytic cells azulophilic, INR 10.9, TP 12.5, TTP 32.5, GLU 84, Urea 28, CR 0.5, BT 0.57 AT the expense of indirect, PCR-27.9, DD-420, TGP-23, RGO-65, FA-281, P-4.1, CA-9.6, CL-109, K-3.7, NA-141, MG-1.9, CPK-20, CPK-MB 17, DHL-268.

It was decided to take a biopsy of the lesions on the trunk and right leg for further analysis. The report was as follows: "Both biopsies present an identical image. Epidermis with subcorneal cumulus of abundant neutrophils; the stratum spinosum shows moderate spongiosis, discrete and irregular acanthosis, as well as scattered necrotic keratinocytes. In the papillary dermis there is edema; underneath, there is a diffuse inflammatory infiltrate, in moderate quantity, composed of lymphocytes, neutrophils and few eosinophils.

The diagnosis of acute generalized exanthematous pustulosis secondary to SARS CoV 2 infection was established. Patient without cardiopulmonary compromise who presented a fever peak of 38°C, paracetamol 500 mg OV was added, without clinical improvement so metamizol 500 mg was added, a dermatological consultation was made and treatment with prednisone, chlorphenamine, hydroxyzine, ciprofloxacin and clindamycin, obtaining favorable results and evolution of the symptoms.

Figure 1: Erythematous rash with a purplish-red urticarial pattern, confluent with generalized localization on the extremities.

Figure 2: Confluent, monomorphous papules forming small lichenified plaques predominantly in extensor region.

Figure 3: Palmar erythema associated with SARS infection CoV 2.

Figure 4: Plantar erythema associated with SARS infection CoV 2.

Figure 5: Perigenital maculopapular erythema with grayish-white plaque formation, localized with adjacent redness and rash, SDRIFE-like rash.

Figure 6: Superficial generalized erythema with livedoid eruption on the trunk.

DISCUSSION

Cutaneous manifestations of SARS CoV 2 tend to be among the least common clinical presentations. Case series have reported an incidence of 0.25% in 2445 pediatric patients; however, despite their rarity, the cutaneous presentations that have emerged in recent months are among most varied in terms of epidemiologic characteristics, morphology and clinical course.[6]

Some authors suggest classifying the dermatologic manifestations of COVID-19 into 6 groups: Urticariform exanthem (erythema multiforme), morbilliform exanthem, papulo vesicular exanthem, erythema pernio (Chillblain-like), livedo reticularis/racemosis and purpuric exanthem. In adults the most common manifestation is morbilliform exanthem, representing 47-55% of the clinical pictures while in children and adolescents are more common chilblains (Chillblain-like) representing up to 19% and urticarial exanthem reported in 10-20% of the cutaneous manifestations in most cases of both presentations in children, the patient is asymptomatic or with minimal systemic symptoms.[7-12]

It should also be noted that most patients with skin lesions as the only or initial manifestation of SARS CoV 2 infection are usually negative in diagnostic tests, with PCR-negative patients being reported in up to 97% of cases with skin lesions. This is probably due to the fact that cutaneous manifestations in children are usually of late onset, and antigen detection and PCR tests are more sensitive in the first days of infection. On the other hand, serological tests for antibodies against SARS CoV 2 in these are reported findings of IgG and IgM negative in the observed studies so that in most cases the causal relationship between the virus and dermatosis is usually based on the epidemiological context of the patient.[12-15]

In Mexico, the most frequent cutaneous manifestations were urticaria (24.4%), maculopapular rash (23.2%),

varicelliform rash (15.2%), enanthema (7.9%), and a perniosiform rash (6.7%). Of interest, 6.1% of patients had palmar erythema and 3.7% had elbow/knee erythema, manifestations rarely associated with COVID-19, a fact that contrasts with the global picture where the most frequent cutaneous manifestations were urticaria and maculopapular rashes. In addition, an unusually high number of cases were observed with varicella-like rash, flexural rash similar to that occurring in symmetrical drug-related intertriginous lesions and flexural exanthema (SDRIFE), extensor surface rash, alopecia, and enanthema. Enanthema and alopecia (including telogen effluvium and alopecia areata) have been increasingly associated with COVID-19.[16]

CONCLUSION

The wide variety of manifestations of this disease forces us to increase our efforts to clarify the pathophysiology of this disease. Likewise, it is essential for the physician to keep constantly updated about the clinical data offered by this entity in order not to overlook the diagnoses and to establish optimal treatment for patients. It is clear that the heterogeneity of this disease presents a constant challenge and that the subtlety of some of its clinical forms obliges us to study in detail the patients who come to us.

Skin manifestations are, therefore, a reflection of complex internal processes that should not go unnoticed, since in some cases they are related to a greater or lesser extent with the severity and prognosis of those who suffer from them.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Rothan HA, Byrareddy SN. The potential threat of multisystem inflammatory syndrome in children during the COVID-19 pandemic. Pediatr Allergy Immunol. 2021;32(1):17-22.
2. Rafferty MS, Burrows H, Joseph JP, Leveille J, Nihtianova S, Amirian ES. Multisystem inflammatory syndrome in children (MIS-C) and the coronavirus pandemic: Current knowledge and implications for public health. J Infect Public Health. 2021;14(4):484-94.
3. Feldstein LR, Rose EB, Horwitz SM. Multisystem Inflammatory Syndrome in U.S. Children and Adolescents. N Eng J Med. 2020;383(4):334-46.
4. Leidman E, Duca LM, Omura JD, Proia K, Stephens JW, Sauber-Schatz EK. COVID-19 Trends Among Persons Aged 0-24 Years - United States. 2020. MMWR Morbidity and Mortality Weekly Report. 2021;70(3):88-94.
5. Brumfiel CM, DiLorenzo AM, Petronic-Rosic VM. Dermatologic manifestations of COVID-19-associated multisystem inflammatory syndrome in children. Clin Dermatol. 2021;39(2):329-33.
6. Hoang A, Chorath K, Moreira A. COVID-19 in 7780 pediatric patients: A systematic review. E-Clin Med. 2020;24.
7. Genovese G, Moltrasio C, Berti E, Marzano AV. Skin Manifestations Associated with COVID-19: Current Knowledge and Future Perspectives. Dermatology. 2021;237(1):1-12.
8. Galván Casas C, Català A, Carretero Hernández G. Classification of the cutaneous manifestations of COVID-19: a rapid prospective nationwide consensus study in Spain with 375 cases. Bri JZ Dermatol. 2020;183(1):71-7.
9. Askin O, Altunkalem RN, Altinisik DD, Uzuncakmak TK, Tursen U, Kutlubay Z. Cutaneous manifestations in hospitalized patients diagnosed as COVID-19. Dermatologic Therapy. 2020;33(6).
10. Morey-Olivé M, Espiau M, Mercadal-Hally M, Lera-Carballo E, García-Patos V. Cutaneous manifestations in the current pandemic of coronavirus infection disease (COVID 2019). Anales de Pediatría. 2020;92(6):374-5.
11. Athwani V, Gothwal S. Dermatological Manifestations of COVID-19 in Children. J Skin Stem Cell. 2020;7:2.
12. Andina D, Belloni-Fortina A, Bodemer C. Skin manifestations of COVID-19 in children: Part 3. Clin Exp Dermatol. 2021;46(3):462-72.
13. Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. Acta Paediatr. 2020;109(6):1088-95.
14. Torrelo A, Andina D, Santonja C. Erythema multiforme-like lesions in children and COVID-19. Pediatr Dermatol. 2020;37(3):442-6.
15. Mirza FN, Malik AA, Omer SB, Sethi A. Dermatologic manifestations of COVID-19: a comprehensive systematic review. Int J Dermatol. 2021;60(4):418-50.
16. Welsh EC, Alfaro Sanchez AB, Ortega Gutiérrez GL. COVID-19 dermatological manifestations: results from the Mexican Academy of Dermatology COVID-19 registry. Int J Dermatol. 2021;60(7):879.

Cite this article as: Arismendi JLM, Torres JMZ, Gutierrez FO, Melendez LF, García GJG, Padilla PL. Cutaneous manifestations of COVID-19: a case report and review of the literature. Int J Res Dermatol 2022;8:504-7.