

Cutaneous small-vessel vasculitis following BNT162b2 booster shot in a pediatric patient

Cristina V. Soto Del Valle¹; Ricardo J. Torres Ramirez¹ & Luis Irizarry Reyes, M.D.²

Department of pediatrics, Universidad Central del Caribe, School of Medicine, Bayamón, Puerto Rico¹
Department of pediatrics, Puerto Rico Women & Children's Hospital, Bayamón, Puerto Rico²



Introduction

Cutaneous Small-Vessel Vasculitis (CSVV) is an inflammation of small blood vessel walls predominantly by immune complex deposition, complement deposition, or leukocyte infiltration, limited only to the skin.

Common causes of CSVV include bacterial or viral infections, drugs, and vaccines.

Due to the Covid pandemic, there has been an emergency mass immunization movement worldwide, and now we are identifying various side effects that might be concerning for the population.

Case Presentation

Case of a 13-year-old female patient who presented with bilateral lower extremity rash that started one day following the administration of the BNT162b2 booster shot. The major clinical findings were raised non-blanching palpable purpura skin lesions diffusely distributed in bilateral lower extremities, buttocks, and bilateral upper extremities. The skin lesions were not painful nor accompanied by itchiness. Patient denied arthralgias, abdominal pain or hematuria. CBC, CMP, Coagulation Panel, CRP, ESR, LDH, U/A, FOBT, and Rheumatoid Panel studies were ordered. (See **Table 1**). Given the clinical history along with physical examination, and absence of other Henoch-Shonlein Purpura features we came to a diagnosis of an isolated cutaneous small vessel vasculitis. The patient responded well to supportive management with IV fluids until skin lesions began to fade away.

Table 1. Laboratories

WBC	11.4 X 10 ³ /UL
Hemoglobin	13.8 g/dL
Platelets	362 X 10 ³ /uL
CRP	2.70 mg/dL (H)
ESR	32 mm/Hr (H)
LDH	308 units/L (H)
ANA Test	Negative
Anti-ds-DNA	< 1.00 (-)
Rheumatoid Factor	0.33 (-)
c3	178 mg/dL (H)
c4	32 mg/dL



Figure 1. A) Maculopapular non-blanching rash extending from the ankles up to the buttocks. Day #2 post-BNT162b2 booster shot administration B) Improvement of rash 8 days after the initial skin rash appearance.

Discussion

To our knowledge, our case is the first in presenting a pediatric patient with an isolated CSVV following administration of the BNT162b2 booster shot.

This case sheds light on the potential rare complications of the BNT162b2 booster shot and may aid physicians in recognizing and adequately managing this adverse reaction within the pediatric population.

Nevertheless, it is important to emphasize that the benefits of getting the Covid-19 vaccine and preventing disease complications outweigh the risk of developing adverse reactions such as CSVV.