

Lipschütz ulceration in a 12-year-old girl following second dose of Comirnaty (Pfizer) COVID-19 vaccine

Keywords: Comirnaty (Pfizer) COVID-19 vaccine, COVID-19, Lipschütz ulceration, non-sexually acquired genital ulceration, vulvar aphthous ulceration

Dear Editors,

Lipschütz ulceration presents with sudden onset symmetrically distributed (“kissing pattern”), well-demarcated, tender, ≥ 10 mm vulvar ulcers with necrotic, fibrinous centers, that generally resolve within 3 weeks.¹ Most patients are ≤ 20 years old and the disease is not sexually acquired.¹ While the etiology is unknown, a recent systematic review reported an associated infective illness in 139 out of 158 (88%) cases; most commonly flu-like illness, infectious mononucleosis, or mycoplasma.¹

An otherwise healthy and not sexually active 12-year-old girl presented to our dermatology clinic with a 5-day history of painful vulval ulceration, associated with difficulty voiding and constipation. Three days before the ulcers appeared she received her second dose of the Comirnaty (Pfizer) COVID-19 vaccine. One day after receiving the vaccine she complained of myalgia. She had no significant comorbidities or allergies, was taking no regular medications and was up to date with immunizations.

Examination revealed four well-defined, deep, punched-out ulcers on the mucosal aspect of the labia minora, two on each side. Her skin, mouth, and eyes were examined normally. A clinical diagnosis of Lipschütz ulceration was made. Swabs for HSV1/2 and VZV PCR, as well as bacterial/fungal Microscopy, Culture and Sensitivity were negative. Serology for EBV and CMV indicated past infection; while serology for mycoplasma, streptococcal, HIV, and celiac disease were negative. Routine blood tests and nutritional indices were normal. A COVID-19 PCR was not performed at our hospital as the patient did not meet our hospital's symptom or epidemiological criteria for testing.

The patient was managed with oral analgesia (paracetamol 1 g 4 times daily, ibuprofen 400 mg 3 times daily, oxycodone 5 mg 4 times daily), laxatives (Movicol - Macrogol 3350, potassium chloride, sodium bicarbonate, sodium chloride), and mid-potency topical corticosteroid ointment (methylprednisolone aceponate 0.1% fatty ointment 2 to 4 times daily); in addition to topical anesthetic as needed (lignocaine gel, lidocaine/prilocaine cream). She returned to school 7 days after commencing treatment. By

day 10 the ulcers on the left labia minora had resolved without scarring, and the larger ulcers on the right were re-epithelializing.

Given the temporal relationship of the patient's second dose of the Comirnaty (Pfizer) vaccine to the ulceration, as well as the absence of another identifiable trigger, we propose the vaccine likely precipitated Lipschütz ulceration. It has been hypothesized that the second dose of the Comirnaty (Pfizer) vaccine may trigger a type III hypersensitivity host-specific immune complex reaction in susceptible recipients, whereby microthrombosis precipitates necrosis and ulcer formation.² To our knowledge, this is the sixth reported case of Comirnaty (Pfizer) vaccine-associated Lipschütz ulceration; with all cases occurring in girls aged 12–16 years within 1–5 days of their second vaccine dose.^{2–5} Clinical features of these cases are tabulated (Table 1). Lipschütz ulceration has also been reported in association with the first dose of the Vaxzevria (AstraZeneca) vaccine² and in the context of COVID-19 infection.⁶

This case is presented to raise awareness of the possible association between the second dose of the Comirnaty (Pfizer) COVID-19 vaccine and Lipschütz ulceration; an adverse reaction that may become more prevalent as vaccine uptake among

What is known about this subject in regard to women and their families?

- Lipschütz ulceration presents with sudden onset symmetrically distributed (“kissing pattern”), well-demarcated, tender, ≥ 10 mm vulvar ulcers with necrotic, fibrinous centers, that generally resolve within 3 weeks.
- While the etiology is unknown, most patients are ≤ 20 years old and the disease is not sexually acquired.
- A recent systematic review reported an associated infective illness in 88% of cases; most commonly flu-like illness, infectious mononucleosis, or mycoplasma.

What is new from this article as messages for women and their families?

- We report the sixth case of Comirnaty (Pfizer) COVID-19 vaccine-associated Lipschütz ulceration; with all cases occurring in girls aged 12–16 years within 1–5 days of their second vaccine dose.
- This case is presented to raise awareness of the possible association between the second dose of the Comirnaty (Pfizer) COVID-19 vaccine and Lipschütz ulceration; an adverse reaction that may become more prevalent as vaccine uptake among the pediatric population increases.
- Doctors should be aware of this in order to reduce unnecessary investigations, facilitate timely management and provide reassurance to patients regarding this rare self-limiting adverse reaction.

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International Journal of Women's Dermatology (2022) 8:e066

Received: 25 May 2022; Accepted 23 October 2022

Published online 9 December 2022

DOI: 10.1097/JW9.000000000000066

Table 1**Characteristics and outcomes of cases diagnosed with Lipschütz ulceration following Comirnaty (Pfizer) vaccine on review of medical literature**

Reference	Year	Age	Dose of Comirnaty (Pfizer) vaccine (1st, 2nd, 3rd, or 4th)	Days after Comirnaty (Pfizer) vaccine that Lipschütz ulceration developed	Other symptoms	Complications	Management	Outcome
Present case	2022	12	2nd	3 d	Myalgia	Difficulty voiding, constipation	Oral analgesia; aperients; gentle skin care; soap-free wash; methylprednisolone aceponate 0.1% fatty ointment, 2–4 × per d for 2 w; topical lignocaine gel; topical lidocaine/prilocaine cream	Mostly resolved (2 w f/u)
Wijaya et al. ²	2022	16	2nd	4 d	Headache, lethargy, fevers	Urinary retention, IDC insertion	Prednisolone, PO, 25 mg, OD for 2 w, then 12.5 mg for 2 w	Mostly resolved (4 w f/u)
Wijaya et al. ²	2022	14	2nd	5 d	Myalgia, lymphadenopathy, fevers	Urinary retention, IDC insertion	Prednisolone, PO, 25 mg, OD for 5 d	Resolution (1 w f/u)
Popatia et al. ³	2022	12	2nd	2 d	Fever	NS	Triamcinolone 0.1% ointment; lidocaine jelly; oral analgesia	Resolution (10 d f/u)
Drucker et al. ⁴	2021	14	2nd	2 d	Myalgia, insomnia, fatigue	Difficulty walking, sitting	Topical lidocaine; skin care; sitz baths	Resolution (10 d f/u)
Wojcicki et al. ⁵	2021	16	2nd	1 d	Myalgia, fever, fatigue	Difficulty walking, voiding, defecating	Topical lidocaine gel; norethindrone, PO, 5 mg, OD; clobetasol 0.05% ointment, BD for 14 d; oral analgesia	Partial resolution (2 w f/u)

BD, twice daily; d, day(s); f/u, follow up; IDC, indwelling urinary catheter; NS, not specified; OD, once daily; PO, per oral; w, week(s).

the pediatric population increases.³ Doctors should be aware of this to reduce unnecessary investigations, facilitate timely management and provide reassurance to patients regarding this rare self-limiting adverse reaction.^{2,4} Given the possibility of recurrent Lipschütz ulceration is vastly outweighed by COVID-19's morbidity and mortality, it is our opinion that a history of Lipschütz ulceration following a COVID-19 vaccine should not preclude further doses.²

Conflicts of interest

None.

Funding

None.

Study approval

N/A

Author contributions

AJF: Participated in research design; Participated in the writing of the paper; Participated in the performance of the research; Participated in data analysis. RSF: Participated in research design; Participated in the writing of the paper; Participated in the performance of the research; Participated in data analysis. BR: Participated in research design; Participated in the writing of the paper; Participated in the performance of the research; Participated in data analysis.

Consent for publication

The patient's legal guardian has provided informed written consent for publishing this manuscript.

Data access availability

The authors are agreeable to providing the editorial team access to the data upon which the manuscript is based on request.

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