# Erythema Multiforme after Pfizer- BioNTech COVID-19 Vaccination in Iraqi Patient

**Marwan Majeed Ibrahim**

*Lecturer, MRCP Respiratory medicine, Tikrit university College of Medicine, Tikrit, Iraq*

## Abstract

COVID-19 vaccine emerges as a revolutionary solution for the pandemic, but the rapid development of vaccines may misses non intentionally certain adverse events that may make a conflict on matter of safety of these vaccines.

Skin reaction may be one of the most noted short term side effects of the vaccines and erythema multiforme may be one of these presentations.

***Key Words:*** *COVID-19 ;COVID-19 Vaccine;Erythema multiforme*

## Introduction

The rapid development of vaccines against COVID-19 virus is one of the most important steps in the fight against the accelerated spread of this lethal viral illnessand the emergence of new strains that may be more fatal. No doubt the benefits and safety of most approved vaccines have been outweigh their possible risks and adverse effects as demonstrated in large clinical trials, recent harms have been reported,so the importance of post-marketing close follow up with large studies or observations is mandatory[(1).]

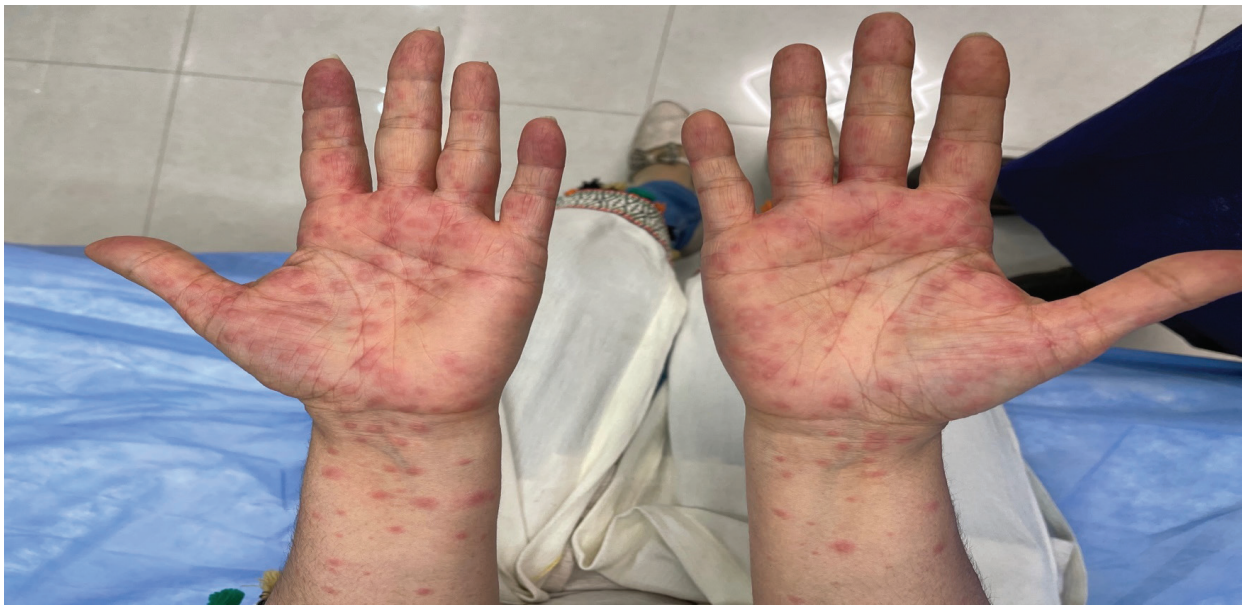
One of the most recently noted COVID-19 vaccines complications that had been reported include vesicular or maculo-papular skin rashes, necrotic lesions, urticaria like reaction, chilblains-like lesions and drug induced eruptions[(2).]

Clinical trial results for BNT162b2 mRNA Covid-19 vaccine reported mild-to-moderate pain at the injection site within 7 days after administration, with severe pain in <1% of participants and redness or swelling in a lower percentage. Local reactions incidence did not increase after the second dose and were mostly mild-to-moderate and resolved within 1–2 days[(3).]

## Case Report

Forty-nine years old lady presented with severe itching and skin rash on both hands with mild sore throat 1 day after receivingthe first dose of Pfizer-BioNTech COVID- 19 vaccine Batch no. fc 8289 from Alzahraa teaching hospital vaccination center in Alkout city, Iraq; the skin rashincrease in severity24 hour later, the patient gave no history of fever, dyspnea, cough or any gastrointestinal symptoms. The patient denies any history of drugs use apart from use paracetamol oral 2 week ago for headache, also has no history of febrile illness in the past few weeks and she has no history of chronic illnesses nor rheumatological diseases. On examination the patient was well, temperature 37.1C°, blood pressure 122/80 mmhg, pulse rate 90 per minute, respiratory rate 15 per minute and SaO2 98%.

Skin examination reveals multiple target lesions over the palmar aspect of both hands and distal forearm over both flexor aspect.(Figure1)



**Figure( 1): Skin rash**

Oral examination discloses erythema and few small ulcers over buccal mucosa and palatal tonsils( Figure 2)

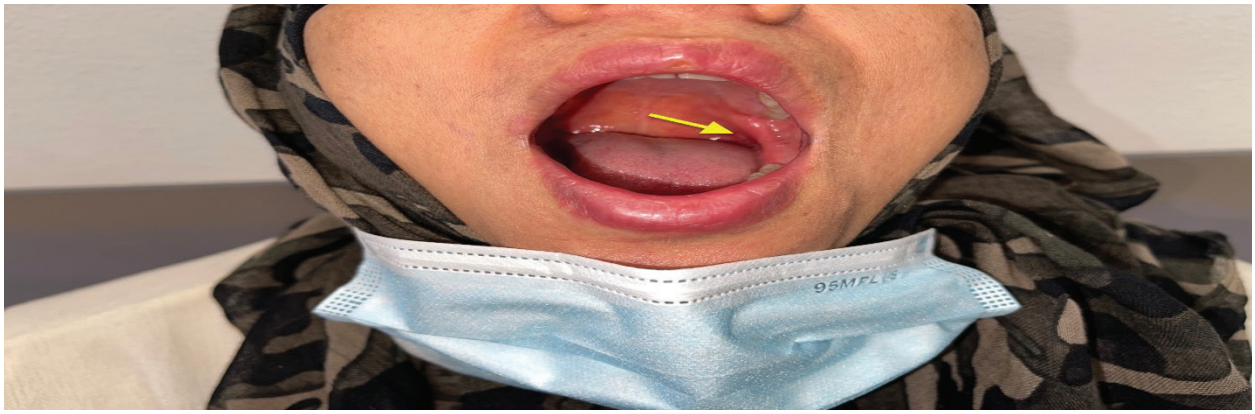


**Figure (2): Buccal mucosal lesion (arrow)**

Systemic examination was negative.

The patient sent blood investigations, the following results:

Hemoglobin 13.3 gm/dl

Platelet count 212 x $10^9$/L

White blood cell 7.2/cc, normal differential count

ESR 22

Herpes viruses serology negative

Normal renal and liver function test

Normal urinalysis

The patient had been treated antihistamine and sent home with close follow up

Erythema multiforme (EM) is a rareself-limited skin disorder, that may recure, resulting from type IV hypersensitivity reaction to certain pathogens e.g., Mycoplasma, Human herpes viruses, drugs, and other various triggers.[(4)]

Erythema multiforme minor represents a localized skin eruption with minimal or no mucosal involvement. The skin lesions evolve into pathognomonic target

lesions that appear within a 72-hour period and begin on hands and feet and may spreads proximally.

Lesions may persist for at least 7 days and then begin to heal. An arcuate appearance may be present.

Erythema multiforme major is a more serious form of the disease, potentially life-threatening disorder in which there will be mucous membranes involvement and up to 10% of total body surface area (TBSA) may have epidermal detachment.

Steven-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) is a widespread blistering mainly on the trunk and face, presenting with erythematous or pruritic macules and one or more mucous membrane erosions; epidermal detachment is less than 10% TBSA for Steven-Johnson syndrome / toxic epidermal necrolysis and 30% or more for toxic epidermal necrolysis.

Cell-mediated immun response may be responsible for the destruction of epithelial cells. The epidermis becomes infiltrated with CD8 T lymphocytes and macrophages, whereas the dermis displays CD4 lymphocytes infiltration.

There are some reported cases of EM/SJS/TEN following exposure to certain vaccine like Hepatitis B, DPaT and MMR.

Despite it may cause different degrees of adverse events but mortality still rare. (5)

The vaccination against COVID-19 process should be continue due to the great benefit of the vaccineon the way of fighting the epidemic and with careful interpretation and evaluation for the possible adverse event of each available vaccines

**Ethical Clearance:** Hospital and patient approvals were taken

**Source of Funding**: None

**Conflict of Interest:** None

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