Recurrent Eruptive Pseudoangiomatosis with Initial Onset After COVID-19 Vaccination: A Case Report

Sema Koç Yıldırım, Nesibe Eda Arslan
Department of Dermatology and Venereology, Uşak University Faculty of Medicine, Uşak, Türkiye

Dear Editor,

Eruptive pseudoangiomatosis (EP) is an acute, self-limiting exanthem characterized by bright red angioma-like papules that typically resolve within a few weeks. It has been reported following infections with echoviruses, enteroviruses, cytomegalovirus, Epstein–Barr virus, adenovirus, parvovirus B19, and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), predominantly in children but also in adults. Recurrent EP is an exceptionally rare condition in the literature. We describe a unique case of long-term recurrent EP that initially developed after coronavirus disease-2019 (COVID-19) vaccination.

A 34-year-old woman with a history of allergic asthma only presented with a two-week history of pruritic, erythematous papules, predominantly on her arms and legs. Her history revealed that she first experienced similar lesions approximately 3.5 years earlier; these lesions emerged about one month after her second dose of the mRNA COVID-19 vaccine (Pfizer–BioNTech) and resolved spontaneously within 2 weeks. She reported that the eruptions had recurred several times over the subsequent 3.5 years, although she could not recall the exact number of episodes. She denied any medication use preceding the recurrences. At the time of her presentation, she reported a flu-like illness; however, she did not recall any antecedent infections during previous episodes. Dermatological examination revealed blanchable erythematous papules with a more prominent peripheral hypopigmented halo, distributed over the bilateral lower extremities (from the gluteal region to the dorsum of the feet), upper extremities (from the elbows to the dorsum of the hands), and the palmoplantar regions (Figure 1a-d). The mucosae were normal. Dermoscopic examination demonstrated dotted vessels over a reticular vascular network with a peripheral halo, findings that may correspond to perilesional vasoconstriction or transient dermal edema, as suggested in previous descriptions of EP (Figure 1e). In ultraviolet mode, the vascular pattern and perivascular halo were also visualized (Figure 1f). Histopathological examination of two 4-mm punch biopsy specimens taken from lower-extremity lesions revealed surface orthokeratosis and mild spongiosis in the granular layer of the epidermis. The superficial dermis showed dilated dermal vessels with vascular endothelial proliferation, accompanied by a predominantly lymphocytic perivascular inflammatory infiltrate. Endothelial swelling was not prominent, and there was no evidence of leukocytoclasia or fibrinoid necrosis. The patient was diagnosed with EP based on clinical, dermoscopic, and histopathological findings, and was treated symptomatically with a topical corticosteroid and an oral antihistamine. Several conditions may enter the differential diagnosis of EP, including cherry angiomas, viral exanthems, and early leukocytoclastic vasculitis. However, in the present case, the characteristic blanchable vascular papules with a surrounding pale halo, together with the dermoscopic

Address for correspondence: Sema Koç Yıldırım, Department of Dermatology and Venereology, Uşak University Faculty of Medicine, Uşak, Türkiye
Email: semakocyildirim@gmail.com
ORCID ID: 0000-0002-0633-1770

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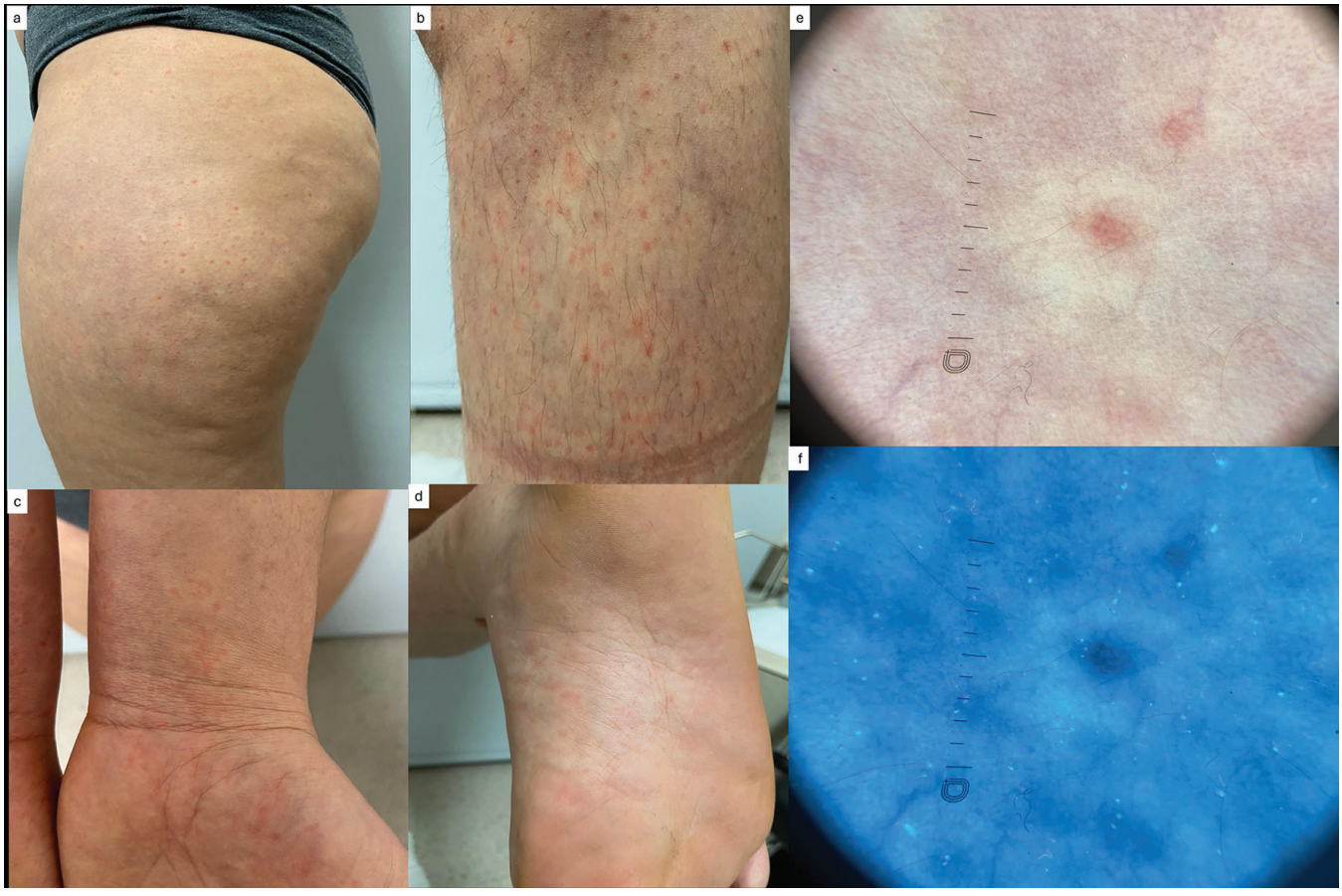

Figure 1. (a–d) Blanchable erythematous papules with a prominent peripheral hypopigmented halo on the lower and upper extremities and palmoplantar areas. (e) Polarized dermoscopy using DermLite DL5 showed dotted vessels over a reticular vascular network with a peripheral halo. (f) Ultraviolet mode demonstrating the vascular pattern and perivascular halo

and histopathologic findings and the absence of vasculitic features, supported the diagnosis of EP.

Since the emergence of COVID-19, accumulating data indicate that SARS-CoV-2 infection and vaccination can act as initial triggers for multiple dermatologic disorders that subsequently follow their natural history. Newly developed or reactivated conditions such as chronic spontaneous urticaria and psoriasis have been documented after COVID-19 infection or immunization, with many of these patients later exhibiting spontaneous recurrences consistent with their well-known relapsing behavior.[1] These findings support the concept that COVID-19–related immune activation may function as an initiating stimulus in predisposed hosts.

However, for EP, post-COVID or post-vaccination cases reported in the literature have almost exclusively presented as an acute, self-resolving, single-episode pattern. To date, all reported instances of EP related to COVID-19 vaccination have occurred after the ChAdOx1 nCoV-19 (Covishield) vaccine; to our knowledge, no published cases have been reported following mRNA (BNT162b2) vaccination (Table 1). Although the onset of the first episode in our patient occurred shortly after COVID-19 vaccination, a temporal association alone does not establish a causal relationship.

To our knowledge, a long-term, intermittently recurrent course extending over several years—particularly following an initial vaccine-associated onset—has rarely, if ever, been documented previously. Our patient's case, therefore, broadens the recognized clinical spectrum of EP and raises the possibility that an initial COVID-19 vaccination may trigger a sustained state of vascular or immunologic reactivity, thereby predisposing the patient to subsequent spontaneous recurrences. Furthermore, because EP has been associated with various potential triggers, most notably viral infections, there may be an additional trigger preceding the recurrent episodes in our patient. However, no prior viral serologic or polymerase chain reaction testing was performed to confirm this possibility, which is a limitation. In addition, the patient was unable to reliably recall the exact number of recurrences or the precise intervals between episodes, representing another limitation of this retrospective history. Given the rarity of chronic-recurrent EP, we believe this case contributes to the

Table 1. Reported cases of eruptive pseudoangiomatosis and corresponding data from our patient's first episode

Study	Number of cases	Age (year)	Sex	Vaccine type	Vaccine dose	Time to onset after vaccination (days)	Associated pruritus	Time to resolution (days)
Mohta et al.[4]	5	24-48	1 M, 4 F	Covishield	NA	5.2	3/5 cases	2-8
Prarthana et al.[3]	1	36	M	Covishield	First and second dose	NA	NA	14
Mohta et al.[2]	53	18-30	NA	Covishield	47 cases after second dose	5.3	5/53 cases	10-14
Current case	1	34	F	BioNTech/Pfizer	Second dose	30	Yes	14

M: Male, F: Female, NA: Not available

expanding spectrum of cutaneous reactions associated with COVID-19 vaccines and may raise clinical awareness of its benign but prolonged course. Further case accumulation is needed to better understand this association. Therefore, the potential role of alternative triggers, including viral infections, should also be considered when interpreting the temporal relationship observed in this case.

Footnotes

Informed Consent: Written informed consent was obtained from the patient for publication of clinical data and images.

Authorship Contributions

Surgical and Medical Practices: S.K.Y., N.E.A., Concept: S.K.Y., N.E.A., Design: S.K.Y., Data Collection or Processing: S.K.Y., N.E.A., Analysis or Interpretation: S.K.Y., N.E.A., Literature Search: S.K.Y., Writing: S.K.Y.

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