breakthrough COVID-19 infection observed here occurred very shortly after booster vaccination. Consequently, we can only speculate that an immune response of massively increased magnitude was the cause for the dramatic clinical picture observed in the present patient, possibly with a genetic predisposition for PRP.

The pathophysiologic link between psoriasis and PRP suggests that interleukin 23 (IL-23)-directed treatment regimens, which are very successfully used for psoriasis patients, might be beneficial for patients with PRP as well. Indeed, NF-κB signalling has been shown to be upregulated in the skin of patients with PRP and CARD14 mutations. Thus, elevated NF-κB activity leads to the production of IL-23 by dendritic cells which contribute to the maintenance of the chronic inflammatory loop in psoriasiform diseases such as PRP.\(^{9,10}\)

Conclusively, we report the first case of severe and recalcitrant PRP in close association with COVID-19 infection observed here occurred very shortly after booster vaccination. Consequently, we can only speculate that an immune response of massively increased magnitude was the cause for the dramatic clinical picture observed in the present patient, possibly with a genetic predisposition for PRP.

**Acknowledgement**

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**Funding sources**

None.

**Conflict of interest**

None declared.

**Data availability statement**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**Figure 2** Histological examination of a skin biopsy: hyperkeratosis alternating with parakeratosis and orthokeratosis, acanthosis with broad rete ridges, areas of hypergranulosis and mild paravascular inflammatory infiltrates in the dermis.

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**Complete remission of primary cutaneous follicle centre cell lymphoma associated with COVID-19 vaccine**

**Editor,**

Primary cutaneous B-cell lymphomas (PCBCL) are non-Hodgkin B-cell lymphomas that are present in the skin with no evidence of extracutaneous involvement at the time of the diagnosis.\(^1\) According to the current World Health Organization classification, primary cutaneous follicle centre cell lymphoma is a subgroup of PCBCL that has a favourable prognosis compared to the other variants.\(^2\) Its treatment depends on the extent of the disease and includes surgery, radiotherapy, and various immunotherapies, mainly introduced intralesionally.

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In this context, we report the case of a 63-year-old male with no previous medical history, who was presented with a large multi-nodular tumour extending to the forelock, mid-scalp, and vertex (Fig. 1a). The patient consulted a general surgeon who performed a skin biopsy. The histological (Fig. 1b-1, b-2) and immunohistochemical appearance (Fig. 1b-3, b-4, b-5 and b-6) were in favour of a primary cutaneous follicle centre B-cell lymphoma (a lymphoid proliferation in the dermis arranged in a follicular pattern with antibodies anti-CD20+, anti-CD10+, anti-Bcl6+, anti-CD30-, anti-CD38-, and anti-Bcl2– with weak labelling of tumour cells by anti-Ki67 antibodies). Then, the patient was referred to our department. Two months following the biopsy, he received his first dose of anti-SARS-Cov2 vaccine from Oxford-AstraZeneca, and had unexpectedly presented a spectacular tumour remission, with the persistence of non-infiltrated erythema in the mid-scalp (Fig. 1c). The patient’s follow-up after the second dose of the anti-SARS-COV2 vaccine showed a greater reduction of residual erythema. The second skin biopsy performed in the residual erythema area showed fibrous scar tissue without lymphomatous cells (Fig. 1d). The complete blood cell count, the lactate dehydrogenase, and the bone marrow biopsy were all normal, and the Borreliosis serology test was negative. However, no immunoglobulin heavy chain gene analysis was done, as it is not available in our country.

As part of the extension assessment and to exclude a secondary cutaneous localization of a lymph node lymphoma – a cervical, thoracoabdominal, and pelvic computed tomography scan was performed, showing lobar reticulo-micronodular infiltrate without other suspicious lesions. Bronchoscopy with biopsy was performed, but no neoplastic cells were found. Furthermore, a positron emission tomographyscan showed no sites of visceral or lymph node hypermetabolic activity. No tumour recurrence was detected after 6-month follow-up.

Complete remission of lymphoma has been reported following different factors, such as bacterial infections or surgical trauma. However, in our case, the chronology of the biopsy performance and the first dose of vaccine in relation to the tumour regression indicate that the vaccine is more likely to be incriminated.

During the COVID-19 outbreak, a few cases of remission of lymphomatous processes were recorded following COVID-19 infection. Federico Pasin et al. reported a case of a transient...
remission of natural killer (NK) lymphoma during COVID19 infection, with a relapse shortly after the patient’s recovery. This observation indicates the oncolytic effect of the virus, by inducing the release of a large amount of pro-inflammatory cytokines known as ‘Cytokinic storm’ that might exhibit an anti-tumour activity. Then, the second case of a 61-year-old man was reported by Sarah Challenor et al.6 show that he has diagnosed with stage IIIa Hodgkin Lymphoma. Yet, the presented clinical and scannographic tumour was decreased after 4 months following the COVID-19 infection.

Meanwhile, another case of a 61-year-old patient with follicular lymphoma showed complete remission after COVID-19 infection,7 supporting the hypothesis that SARS-COV2 infection triggers an immune response that induces a local flare phenomenon which was followed by the abscopal effect.

The AstraZeneca COVID-19 vaccine is understandably considered a replication-deficient simian adenovirus vector, and has a stimulating role in the immune system. It is used widely in several countries with rare adverse effects.8 It may stimulate an unspecific immune activation that induces tumour regression. This reaction is similar to the one induced by the BCG vaccine, particularly in the treatment of metastatic melanoma, as it activates the immune system and destroys the tumour cells.9

Finally, it is important to stress here that our case report is the first to describe a complete remission of follicular B-cell lymphoma after the COVID-19 vaccine, which is still maintained after a follow-up of 6 months. This report may lead to revolutionary advances in the pathophysiological understanding and treatment of lymphoma.

**Conflicts of interest**
None.

**Funding sources**
None.

**Informed consent**
The patients in this manuscript have given written informed consent to the publication of their case details.

**Data availability statement**
Data openly available in a public repository that issues datasets with DOIs.

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**Maskne prevalence and risk factors during the COVID-19 pandemic**

Dear Editor,

From 2020 with the spreading of COVID-19 pandemic, mask usage has become mandatory for healthcare workers and patients in order to avoid virus transmission; maskne is a new coined term widely used to describe the form of mechanical acne resulting from the continuous adherence and friction of the mask to the face; to date, several dermatoses, including maskne, have already been reported in healthcare workers and patients.1 We read with great interest the article recently published by Kiely LF et al.2 who investigated the prevalence of acne related to prolonged mask wearing among the healthcare workers of three Irish university hospitals, and we also want to report our experience regarding the onset of maskne disease in patients attending our Department. A total of 384 patients (272 females and 112 males; median age 26.5) with a diagnosis of mechanical acne due to mask wearing attending our hospital from February 2021 to December 2021 were included in the study. Each patient was clinically evaluated and completed a questionnaire regarding the onset of acne, previous history of acne, the personal protective equipment (PPE) exposure, maskne development, and the use of contributing factors; most patients (70.8%) were females; 64 patients (16.6%) were aged 15–20 years, 232 (60.4%) were aged 21–30 years, 71 (18.5%) were...