of new papules (Fig. 1b,d). No adverse effects were reported with tofacitinib use during these weeks. Follow-up was then interrupted because of preparation for pregnancy.

EBP is a rare subtype of dystrophic epidermolysis bullosa (DEB). DEB derives from mutations in the *COL7A1* gene encoding for Type VII collagen, the major component of anchoring fibrils at the dermal–epidermal junction.[1] EBP may have dominant or recessive inheritance, and it can be misdiagnosed as nodular prurigo, lichen planus and other conditions.[2]

The cause of pruritus in EBP is unclear, and there is no specific drug treatment. Janus kinase (JAK) inhibitors significantly inhibit the production, migration and maturation of dendritic cells, thus inhibiting the direct connection between pruritus-related factors [interleukin (IL)-31, tumour necrosis factor (TNF)-α and thymic stromal lymphopoietin (TSLP)] and skin sensory neurons,[3] and thereby alleviating pruritus. Patients with DEB display increased levels of IL-1b, IL-2, IL-6, IL-12, TNF-β and interferon (IFN)-γ, but reduced levels of TNF-α.[4] JAK-signal transducer and activator of transcription (STAT) pathways are involved in signal transduction of numerous dermatologically relevant cytokines such as IFN-α/β/γ, IL-2, IL-4, IL-5, IL-6, IL-12, IL-13 and IL-23. Previous studies have shown that oral treatment with tofacitinib, a JAK inhibitor, could significantly reduce pruritus in a mouse dermatitis model.[3] Tofacitinib is specific to JAK1 and JAK2, and can play a therapeutic role by inhibiting the aforementioned EBP-related cytokines.[5] More recently, it was reported that dupilumab (a drug specifically binding IL-4 and IL-13) had been used successfully to treat EBP and the associated pruritus.[6]

We used tofacitinib to target the downstream JAK-STAT signalling pathway, thereby inhibiting the inflammatory response and relieving pruritus. Even though this study was limited by the short follow-up time because of the interruption of treatment due to the patient's desire for pregnancy, it indicates that JAK inhibitors may be a useful treatment choice.

In conclusion, the relief of pruritus and reduction in new lesions demonstrates that tofacitinib treatment is effective for EBP. Larger studies are warranted to confirm this finding.

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Comparison of cost changes due to the COVID-19 pandemic for Dermatology residency applications in the USA

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Dear Editor,

The financial burden placed on medical students in the USA includes not only school tuition costs, but also residency application costs. A previous survey study found that some medical students took loans of up to US$7000 for the interview process alone, while others took extreme cost-saving measures, such as opting to sleep in restaurants.[1] In 2014, matched applicants paid an average US $11 324 for dermatology residency applications, with costs consistently rising (Table 1).[2,3] We believe COVID-19 restrictions may have reduced application costs because of virtual interviews being used and away rotations being discouraged.

We performed a cost estimation for US medical school seniors applying for Dermatology residency before and during the COVID-19 pandemic. Application costs pre-COVID-19 (2016–2020) included fees for the Electronic Residency Application Service (ERAS), National Resident Matching Program (NRMP) and US Medical Licensing Exam (USMLE), away-rotation costs, and travel costs to interviews. The Consumer Price Index Inflation Calculator from the US Bureau of Labor Statistics was used to calculate inflation each year.[4] Away-rotation costs were based on a rotation of 1 month, accounting for the mean cost

Table 1 Estimation of residency application costs 2016–2021.

	Year of application					
Parameter	2016	2017	2018	2019	2020	2021
Total applicants (US MD seniors), *n*	619	651	651	701	797	734
Mean applications submitted per applicant, *n*	63	69	69	68	66	67
Mean cost of application fees per applicant	1225	1393	1413	1407	1355	1441
Mean number of interviews accepted, *n*	7.44	7.53	7.87	8.00	8.45	8.30
Estimated overall interview cost, USD[a]	3769	3908	4169	4303	4658	153[b]
Estimated cost of one away rotation, USD[a]	2169	2224	2270	2305	2362	0
Mean total cost of application, USD[c]	7309	7679	8007	8180	8541	1759

MD, Medical Doctor. [a]Estimated costs adjusted to account for inflation. [b]Estimated cost of internet for online interviews. [c]Average total application cost is equal to the sum of applications, fees, interviews and away-rotation costs.

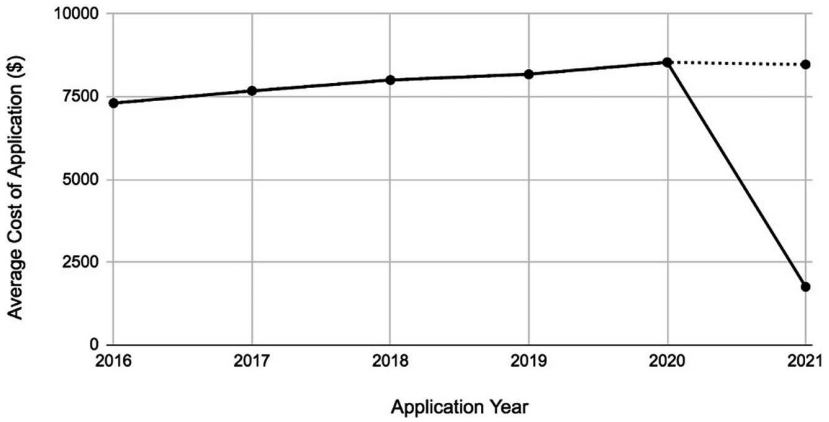

Figure 1 Estimated costs of US Dermatology residency applications. Dashed line represents estimated costs without COVID-19 restrictions, including away rotations and in-person interviews.

of living and adjusted for inflation. Application costs during the COVID-19 pandemic (2021) included only application fees and internet costs, as there were no away rotations or in-person interviews.[5] Additionally, we surveyed dermatology programme directors to compare the effect of virtual and in-person interviews.

Without COVID-19 restrictions, we projected the average application cost for dermatology residency to be $8476 per applicant (Fig. 1). With COVID-19 restrictions, we estimated the average application cost to be $1759 per applicant. The transition to virtual interviews saved each applicant almost $6882. While these savings are substantial, the importance of nonvirtual away rotations remain critical in medical education and residency placement. If away rotations return to in-person and interviews remain virtual, the estimated application cost would be $4154 (including one away rotation), saving applicants around $4322. In a survey of 27 programme directors, 70% were either very or extremely willing to participate in online interviews again in the future. When the programme directors were asked about their overall impression of online interviews, 86% stated that they were very to extremely satisfied. Although they were mostly satisfied with online interviews, 52% of the programme directors agreed that in-person interviews were better to achieve a more holistic view of the applicant. Furthermore, 81% of the programme directors also agreed that in-person interviews allowed for the most realistic impression of the programme.

Based on our calculations, COVID-19 restrictions led to significant savings in application costs to dermatology residency. It is important to acknowledge the limitations that virtual interviews pose for both the applicant and the programme directors. However, it is also critical to consider that virtual interviews may alleviate the cost burden on medical students. It could be beneficial to have the option of virtual interviews in the future to decrease financial barriers in the application process.

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Muir–Torre syndrome: a case of unusual coexisting genetic mutations

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Dear Editor,

Muir–Torre syndrome (MTS) is a rare autosomal dominant genodermatosis that was independently described by Muir in 1967 and Torre in 1968. MTS is a phenotypic subtype of Lynch syndrome, and most commonly arises due to germline mutations in mismatch repair genes.[1] MTS manifests with at least one cutaneous neoplasm and one visceral malignancy.[1] The cutaneous neoplasms in MTS include sebaceous adenoma, epithelioma and carcinoma, and less frequently, keratoacanthoma and squamous cell carcinoma (SCC). MTS should be suspected in young patients presenting with internal and cutaneous malignancies.

A 40-year-old man presented with an enlarging, exophytic ulcerated lesion 30 × 40 mm in the left anterior triangle of the neck (Fig. 1a). He had a history of invasive adenocarcinoma of the ascending colon (pT4N2bR0, Dukes C) successfully treated with a laparoscopic right hemicolectomy and adjuvant chemotherapy. He also had a significant family history of colon cancer. The adenocarcinoma demonstrated a loss of both *MSH2* and *MSH6*, raising suspicion for Lynch syndrome. Following joint review by the dermatology and plastic surgery departments, the initial clinical differential diagnoses included cutaneous SCC, a metastatic deposit from an internal malignancy or a rare appendageal tumour.

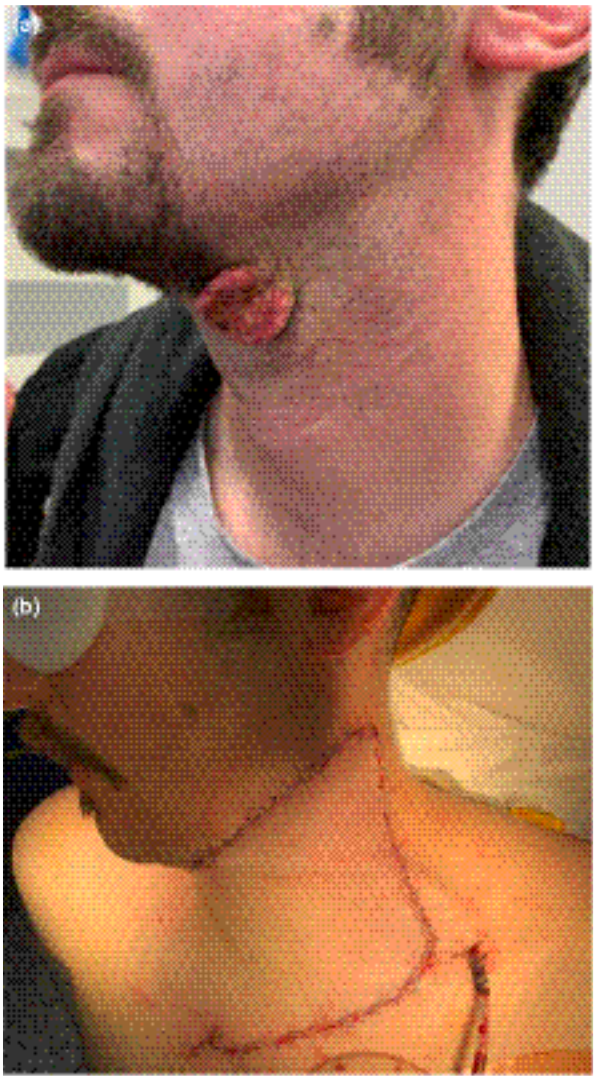

Figure 1 (a) Exophytic ulcerated lesion, 30 × 40 mm, in the left anterior triangle of the neck in a 40-year-old man, which was diagnosed as squamous cell carcinoma; (b) appearance following prophylactic neck dissection with 6-mm wide local excision rotation advancement closure.

An excisional biopsy showed a well-differentiated pT3 invasive SCC, Clark level 5, with no lymphovascular or perineural involvement (Fig. 2a). The carcinoma demonstrated loss of *MSH2* and *MSH6* on immunohistochemistry (Fig. 2b). As computed tomography of the neck was negative, he underwent prophylactic neck dissection of levels 1A, 1B, 2A and 3, and a 6-mm margin wide local excision with a rotation advancement closure (Fig. 1b).

