

Pseudolymphoma of the nipple treated with topical imiquimod and cryotherapy



Amy Xiao, BS,^a John D. Miedler, MD,^b and Oleg E. Akilov, MD, PhD^c

Key words: atrophy; imiquimod; lymphoproliferative disorder; nipple; pseudolymphoma; sclerosis; treatment.

INTRODUCTION

Pseudolymphoma is difficult to treat because the external trigger is frequently unknown, and even if it is known, removal does not guarantee a cure. There is a lack of standardized treatment, but generally accepted options for the treatment of pseudolymphoma include observation, antibiotics, topical, intralesional and systemic corticosteroids, cryosurgery, photochemotherapy, local radiation therapy, and surgical excision.¹ Treatment choice should depend on patient comfort, expectations, and the location of the lesion because some areas of the skin are more delicate than others. Here, we present a case of pseudolymphoma of the nipple, which presented a challenge in terms of treatment because of its location, successfully treated with topical imiquimod and cryotherapy.

CASE REPORT

A 78-year-old woman was evaluated for chronic bilateral nipple eruption of 5 to 6 years' duration, believed to be because of irritation from her bra. Physical examination showed well-demarcated 2 cm in diameter nummular mildly pruritic erythematous plaque with a fine scale on the left and right upper external quadrant of both nipples (Fig 1). The plaques persisted despite treatment with topical mild-to-moderate corticosteroids. The specimen demonstrated a nodular and diffuse inflammatory cell infiltrate within the dermis (Fig 2, A and B). The inflammatory cell infiltrate was comprised predominantly of small-to-medium size lymphocytes, but there were also intermingled eosinophils and histiocytes (Fig 2, C). Immunohistochemical staining for

CD3 and CD20 showed an admixture of CD3⁺ T cells and CD20⁺ B cells. The CD20⁺/CD5⁻/CD10⁻ B cells showed expression predominantly within the nodular aggregates (lymphoid germinal center with retained mantle zones) with a retained expression of B-cell lymphoma 6 and no aberrant expression of B-cell lymphoma 2. CD3⁺ T cells show an appropriate CD4:CD8 with a retained expression of CD5 and CD7 (Fig 3). The systemic lymphoid process was excluded by imaging and complete blood cell count. The lesions were treated with cryotherapy monthly and imiquimod 5% cream 3 times per week (Fig 1). They were stable 2 months later but had approximately 90% clearance in the third month. The total treatment duration was 4 months. Side effects of the treatment included minimal irritation and bleeding around the nipple when showering.

DISCUSSION

The nipple is a difficult skin area to treat because injections of corticosteroids can cause subcutaneous fat atrophy, and radiation therapy to the breast has been documented to induce dermal sclerosis, dimpling, and lymphedema.^{2,3} To our knowledge, this is the first report of topical imiquimod as an effective treatment for pseudolymphoma. Imiquimod is an immunomodulator⁴ that binds to toll-like receptor 7 expressed in antigen-presenting cells, which induce innate and adaptive immunity and stimulates cytokine production.⁵ It is approved for the treatment of anogenital warts, actinic keratosis, and superficial basal cell carcinoma, and is used off-label for the successful treatment of numerous conditions, including squamous cell

From the School of Medicine^a and Cutaneous Lymphoma Program, Department of Dermatology, University of Pittsburgh, Pittsburgh, Pennsylvania^c; and DermPath Diagnostics, Pittsburgh, Pennsylvania.^b

Funding sources: None.

IRB approval status: Not applicable.

Correspondence to: Oleg E. Akilov, MD, PhD, Department of Dermatology, University of Pittsburgh, 3708 Fifth Avenue, 5th

Floor, Suite 500.68, Pittsburgh, PA 15213. E-mail: akilovoe@upmc.edu.

JAAD Case Reports 2022;30:38-40.

2352-5126

© 2022 by the American Academy of Dermatology, Inc. Published by Elsevier, Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

<https://doi.org/10.1016/j.jidcr.2022.10.008>



Fig 1. Pseudolymphoma on the right nipple. **A**, Before the treatment, **B**, 42 weeks after treatment, and **C**, 57 weeks after treatment.

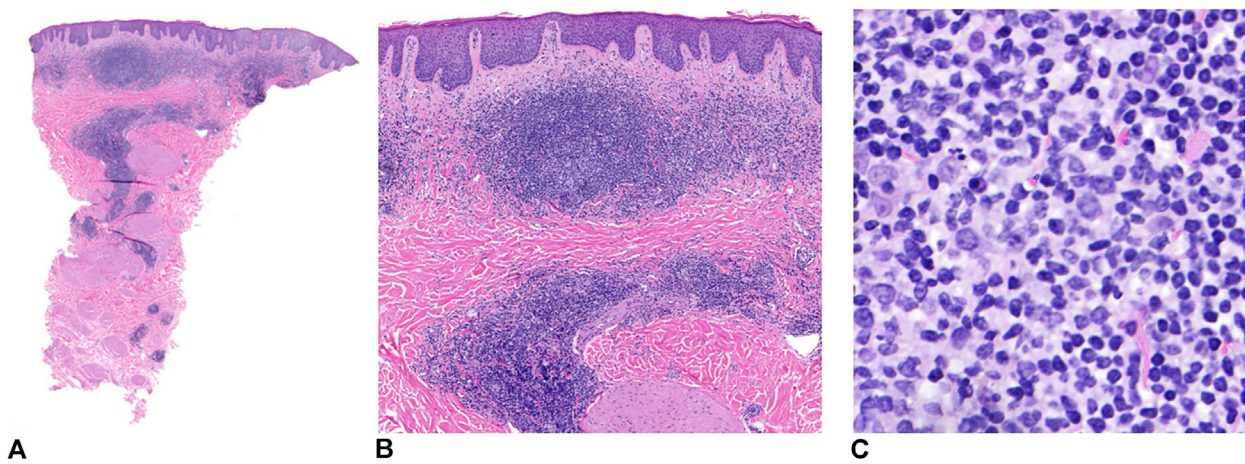


Fig 2. Punch biopsy of the right nipple. Dermal papillary and reticular nodular infiltrates of lymphocytes with an admixture of eosinophils and histiocytes. (**A**, **B**, and **C**, Hematoxylin-eosin stain; original magnifications: **A**, $\times 10$; **B**, $\times 20$; and **C**, $\times 40$.)

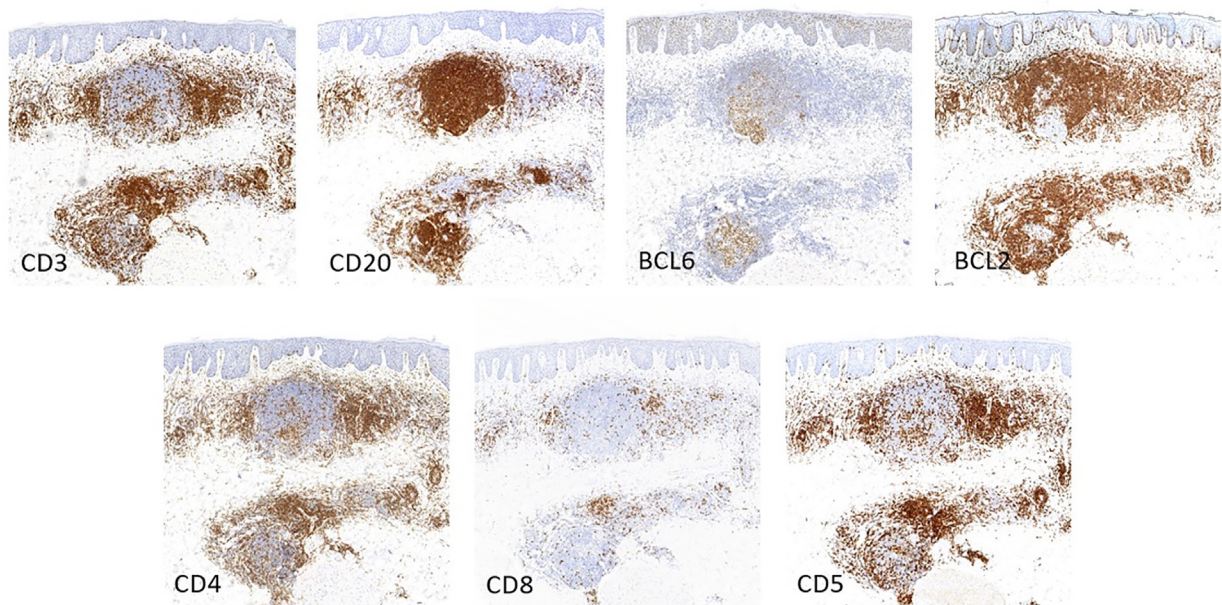


Fig 3. Immunohistochemical staining highlighted the nodular infiltrate of $CD20^+$ B-cell lymphoma 2^+ lymphocytes with $CD4^+$ T cells on the periphery.

carcinoma, penile and vulvar intraepithelial neoplasia, molluscum contagiosum, and lentigo maligna.^{4,5} Documentation of this patient's presentation and favorable clinical course with topical imiquimod with topical imiquimod will offer another therapeutic approach to pseudolymphoma, especially for delicate skin areas.

Conflicts of interest

None disclosed.

REFERENCES

1. Gilliam AC, Wood GS. Cutaneous lymphoid hyperplasias. *Semin Cutan Med Surg.* 2000;19:133-141.
2. Park SK, Choi YS, Kim HJ. Hypopigmentation and subcutaneous fat, muscle atrophy after local corticosteroid injection. *Korean J Anesthesiol.* 2013;65(suppl 6):S59-S61.
3. Gutkin PM, Fernandez-Pol S, Horst KC. Erythema of the skin after breast radiotherapy: it is not always recurrence. *Int Wound J.* 2020;17:910-915.
4. Ganjian S, Ourian AJ, Shamtoub G, Wu JJ, Murase JE. Off-label indications for imiquimod. *Dermatol Online J.* 2009;15:4.
5. Hanna E, Abadi R, Abbas O. Imiquimod in dermatology: an overview. *Int J Dermatol.* 2016;55:831-844.