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RICERCA E INNOVAZIONE IN DERMATOLOGIA

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Nasce la FISD – Federazione Italiana Società Dermatologiche: un passo storico per la dermatologia italiana È stata ufficialmente fondata la FISD, Federazione Italiana Società Dermatologiche, un organismo che riunisce le principali società dermatologiche italiane con l'obiettivo di promuovere, rafforzare e valorizzare il ruolo del dermatologo nel panorama sanitario nazionale.
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– Promuovere la formazione e la ricerca, organizzare linee guida condivise e campagne di sensibilizzazione per la popolazione.
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L' ISPLAD è tra le dieci società fondatrici della FISD e si impegna a dare il suo massimo contributo per una rapida affermazione della Federazione.
Collegandosi al sito www.isplad.org sarà possibile leggere lo statuto della FISD.
Tutte le Società scientifiche italiane di dermatologia potranno iscriversi alla FISD se avranno i requisiti previsti dallo statuto.

Antonino Di Pietro
Presidente ISPLAD

Nella foto i firmatari dell'accordo, in rappresentanza delle Società Scientifiche fondatrici della FISD, da sinistra :
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CONTENTS

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Efficacy and safety of calcipotriol/betamethasone dipropionate foam in the treatment of pediatric guttate psoriasis: A case of off-label use.

Simone Amato

Simone Amato[1], Luca Guarino[1], Francesca Sasso[1], Emanuele Amore[1], Annunziata Dattola[1]

ABSTRACT

Guttate psoriasis represents a significant therapeutic challenge in the pediatric population, with limited treatment options that are often used off-label. This article describes the case of an 8-year-old pediatric patient with guttate psoriasis resistant to conventional treatments, successfully treated with calcipotriol/betamethasone dipropionate (Cal/BD) foam.
Despite Cal/BD being approved only for patients over 12 years of age and primarily for plaque psoriasis, the treatment led to complete resolution of lesions after 4 weeks, without side effects.
This clinical case suggests that Cal/BD foam could represent an effective and safe therapeutic option for guttate psoriasis in the pediatric population, offering a valid alternative when conventional treatments prove ineffective.

KEYWORDS
Betamethasone, calcipotriol, pediatrics, guttate psoriasis, off-label treatment

INTRODUCTION

Psoriasis is a chronic inflammatory skin disease that affects approximately 1-3% of the global population, with an incidence rate of around 0.7% in children (Mercy et al., 2013). Among its various clinical manifestations, guttate psoriasis is a prevalent variant in the pediatric demographic, often triggered by streptococcal infections. Characterized by the sudden appearance of small, drop-shaped erythematous papules, guttate psoriasis may pose significant psychosocial challenges for affected children and their families (Ko et al., 2010). The treatment of psoriasis in pediatric patients presents unique hurdles, primarily due to the limited approval of many therapies for this age group, leading to frequent off-label use of medications (Taraska et al., 2015). First-line therapies for pediatric psoriasis typically encompass topical treatments, including corticosteroids, vitamin D analogs, calcineurin inhibitors, and combination modalities.

1
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Although these topical agents are foundational in the management of psoriasis, their efficacy can be variable, and ensuring therapeutic adherence is often difficult, particularly among younger patients who may struggle to comply with complex regimens (Lebwohl et al., 2021).

Calcipotriol/betamethasone dipropionate (Cal/BD) foam represents a novel topical treatment approved by the FDA in October 2015 for managing plaque psoriasis in adults. Its formulation combines the anti-inflammatory properties of betamethasone with the antiproliferative and keratinocyte differentiation-promoting effects of calcipotriol, suggesting a potential for enhanced efficacy compared to monotherapies (Lind et al., 2016). Due to its promising pharmacological profile, Cal/BD foam warrants investigation in pediatric populations, particularly for conditions such as guttate psoriasis. This article presents a clinical case of successfully treating pediatric guttate psoriasis with Cal/BD foam, emphasizing the therapeutic efficacy and safety of this off-label approach. The findings may contribute to a growing body of evidence supporting the use of Cal/BD foam as a valuable treatment option in pediatric patients who struggle with the management of psoriasis.

Case Report

An 8-year-old male patient presented to our attention with a history of numerous small, scaly erythematous papules, drop-shaped, primarily located on the trunk and upper limbs. The clinical picture was compatible with a diagnosis of guttate psoriasis. The Streptozyme test, performed to exclude a streptococcal infection as a triggering factor, was negative.

The patient was otherwise in good health, without significant comorbidities. At the time of initial evaluation, the PASI (Psoriasis Area and Severity Index) score was 12 (**Fig. 1 A, B**).

The patient was initially treated with topical application of vitamin D analogs (calcipotriol and subsequently tacalcitol) twice daily. After 4 weeks of treatment, no significant clinical improvement was observed.

The patient's mother also reported that exposure to solar ultraviolet radiation during the summer period had not produced appreciable benefits.

Given the lack of response to conventional topical treatments, initiation of systemic therapy was proposed. However, the child's parents refused all conventional systemic therapies, expressing concern about potential side effects in pediatric patients.

In agreement with the parents, off-label use of calcipotriol/betamethasone dipropionate (Cal/BD) foam was therefore proposed. The use was considered off-label for two reasons: the indication for guttate psoriasis (while approval is for plaque psoriasis) and the patient's age, as the product is approved only for patients over 12 years of age.

Treatment with fixed-dose combination Cal/BD foam (calcipotriol 50 µg/g + betamethasone dipropionate 0.5 mg/g) was initiated with once-daily application. After 4 weeks of treatment, significant resolution of the lesions was observed, with reduction of the PASI score to 0 (**Fig. 2 A, B**), indicating complete clinical remission.

Figure 1

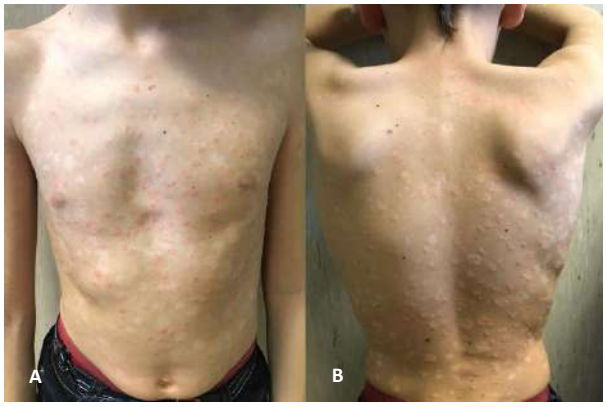
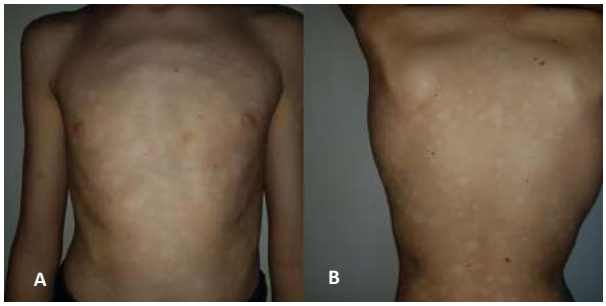


Figure 2



No adverse effects were recorded during the treatment period. The patient underwent follow-up for an additional 8 weeks after treatment discontinuation, during which no relapses or exacerbations of the disease occurred.

Discussion

Guttate psoriasis is a prevalent clinical variant of psoriasis among the pediatric population, characterized by small, drop-shaped lesions that can manifest suddenly, frequently following a streptococcal infection.

The prevalence of this form varies, affecting approximately 6-26% of children with psoriasis—this is significantly higher than the incidence seen in adults, highlighting the urgency of effective treatment options (Mercy et al., 2013; Maciejewska-Radomska et al., 2015).

Despite the prominent occurrence, the approved therapeutic options for pediatric psoriasis are limited, compelling dermatologists to often resort to off-label treatments (Ko et al., 2010).

In the case presented, the application of calcipotriol/betamethasone dipropionate foam (Cal/BD) displayed exceptional efficacy, achieving complete resolution of lesions after just 4 weeks of treatment.

This outcome is particularly noteworthy as the patient had previously not responded to conventional treatments, including monotherapy with vitamin D analogs and sunlight exposure (Radosa et al., 2011). The Cal/BD foam signifies a significant therapeutic advancement in psoriasis management, effectively merging the anti-inflammatory properties of betamethasone dipropionate with the antiproliferative and keratinocyte differentiation-inducing effects of calcipotriol. This synergistic approach mitigates hyperproliferation, promotes keratinocyte differentiation, and provides a superior anti-inflammatory response compared to monotherapy with either drug (Yan et al., 2018).

Recent studies confirm that the dual-action mechanism of Cal/BD addresses both inflammatory pathways and aberrant keratinocyte proliferation, which are core components of psoriasis pathogenesis (Damiani et al., 2021).

Furthermore, the foam formulation showcases distinct advantages over other topical therapies. Its improved skin penetration and heightened bioavailability of active ingredients contribute to its efficacy (Ruiz-Romeu et al., 2018). The convenience of application and rapid drying time associated with the foam format can also enhance treatment adherence, an essential consideration in the pediatric patient population (Aðalsteinsson & Amir, 2017). Research indicates that foam vehicles improve drug delivery through the stratum corneum when compared to traditional ointments or creams, which may elucidate the favorable clinical outcomes noted in our patient (Muneem et al., 2020). While Cal/BD foam is presently approved for patients older than 12 years with plaque psoriasis, emerging studies are evaluating its safety and efficacy within the adolescent demographic. A recent phase II, open-label, multicenter study assessed its use in adolescents (aged 12 to <17 years) with plaque psoriasis, revealing that the foam was well tolerated with no evidence of hypothalamic-pituitary-adrenal (HPA) axis dysregulation or calcium homeostasis disturbance (Brummer et al., 2017).

The occurrence of treatment-emergent adverse events (TEAEs) paralleled those seen in adult populations, with minimal adverse events deemed related to the Cal/BD treatment. Our clinical experience extends the current understanding of Cal/BD foam efficacy to a younger patient (8 years old) and a different psoriasis variant (guttate), suggesting that the therapeutic benefits might converge beyond the currently sanctioned applications. We emphasize the absence of adverse effects throughout the treatment period, with an 8-week follow-up indicating sustained remission, which speaks to the treatment's potential long-term effectiveness (Radosa et al., 2011).

Managing pediatric psoriasis entails unique challenges as discussed by Haurie et al. (2024) in their overview of off-label treatments.

They report that while psoriasis affects 0.5-1.2% of children and adolescents, treatment options often mirror those proposed for adults. Most existing data on safety and efficacy largely stem from adult research, which has established a significant knowledge gap for pediatric patients needing evidence-based treatment modalities (Ko et al., 2010).

Specifically, guttate psoriasis is noted to affect 6-26% of children with psoriasis and is predominantly triggered by upper respiratory infections caused by streptococci, with nearly one-third of cases posing a risk for potential transition into plaque psoriasis later in life (Maciejewska-Radomska et al., 2015; ,Yan et al., 2010). Understanding this epidemiological backdrop emphasizes the need for effective early interventions in pediatric guttate psoriasis. Haurie et al. also elucidate the scarcity of robust clinical evidence, revealing that of the 50 studies addressing off-label pediatric psoriasis treatments, only 23 were classified as clinical trials, with merely four randomized (Ko et al., 2010).

Nevertheless, they advocate for the application of unapproved treatments when clinical experience suggests positive outcomes, which aligns with our therapeutic strategy in this instance. A recent systematic review recommended employing topical corticosteroids and calcipotriol cream in conjunction with phototherapy as primary interventions for guttate psoriasis (Tollefson et al., 2010). Our findings support this directive but suggest that the fixed combination of Cal/BD in foam form may offer superior advantages regarding adherence and overall efficacy compared to sequential application of distinct agents. Combination therapy utilizing calcipotriol and betamethasone presents considerable advantages over solitary treatments, enhancing efficacy while improving adherence.

The capacity to utilize both medications through a single daily application mitigates corticosteroid-related side effects, thus streamlining treatment regimens, which is vital in pediatric care (Stefanaki et al., 2011). Various randomized, double-blind studies corroborate the superiority of Cal/BD against standalone topical corticosteroids, showing substantial responsiveness across varying severity levels of psoriasis while establishing efficacy without compromising safety profiles (Choe et al., 2012). Recent directives from the European Medicines Agency mandate that novel pharmaceuticals undergo pediatric clinical trials to procure marketing authorization successfully. Such regulatory changes are expected to yield additional insights into the effectiveness and safety of new therapeutic agents for children and adolescents with psoriasis, potentially paving the way for innovations like Cal/BD foam for managing guttate psoriasis (Aðalsteinsson & Amir, 2017). It is essential to acknowledge the limitations of our observations, as this study represents a singular clinical case. Larger, controlled clinical studies in pediatric populations will be necessary to firmly establish the safety and efficacy of Cal/BD foam for treating guttate psoriasis in children.

Evaluations of long-term implications remain critical, particularly regarding the risks associated with extended topical corticosteroid use among younger patients, such as HPA axis suppression and implications for growth (Harrison, 2022). Research indicates that pediatric patients at risk of psoriasis often face a doubled likelihood of developing related comorbidities compared to their healthy peers.

These can include conditions such as hyperlipidemia, obesity, hypertension, diabetes mellitus, polycystic ovary syndrome, nonalcoholic fatty liver disease, rheumatoid arthritis, and Crohn's disease, underscoring the need for effective management of pediatric psoriasis beyond cutaneous clearance (Simões et al., 2015).

In terms of treatment choices for pediatric guttate psoriasis, it should be noted that while systemic treatments may be necessary for severe or stubborn cases, they introduce additional risks and concerns specific to the pediatric population.

The effective treatment of our patient with topical Cal/BD foam precluded the need for systemic medical intervention, addressing parental concerns regarding potential systemic side effects (Sitton et al., 2024). Advancements in understanding psoriasis pathogenesis have catalyzed the development of increasingly targeted biologic therapies, more frequently used in adult psoriasis, while their role in managing pediatric psoriasis remains limited. Despite this, the successful resolution of our patient's condition with topical therapy reinforces the necessity of optimizing topical treatment strategies prior to considering systemic or biologic therapies in younger patients (Wu et al., 2024). The rapid and complete response observed in our patient warrants further investigation into the mechanisms underpinning

underpinning the enhanced effectiveness of Cal/BD foam in treating guttate psoriasis.

There is a possibility that the specific inflammatory pathways involved in guttate psoriasis are particularly sensitive to the combined actions of Cal/BD. This necessitates further exploration into the immunopathogenesis of various psoriasis types concerning pediatric populations, which could inform more targeted therapeutic strategies (Kim et al., 2010.

Conclusions

The presented clinical case provides preliminary evidence on the efficacy and safety of calcipotriol/betamethasone dipropionate foam in the treatment of guttate psoriasis in an 8-year-old pediatric patient.

Despite off-label use for age and indication, the treatment led to complete resolution of lesions after 4 weeks, without observable adverse effects and with a lasting effect in the 8-week follow-up.

These results suggest that Cal/BD foam could represent a valid therapeutic option for pediatric patients with guttate psoriasis who do not respond to conventional topical treatments, offering an effective alternative before considering potentially riskier systemic therapies.

The foam formulation, with its ease of application and simplified dosing regimen (once daily), could also improve treatment adherence, a crucial aspect in managing chronic diseases in children.

It is important to emphasize that, although this clinical case provides promising results, controlled clinical studies on larger pediatric populations are needed to confirm these preliminary findings and establish clear guidelines for the use of Cal/BD foam in children with different variants of psoriasis. Particular attention should be paid to the evaluation of long-term safety, considering the potential risks associated with prolonged use of topical corticosteroids in pediatric patients.

In conclusion, this clinical case highlights the potential of Cal/BD foam as an effective and safe treatment for pediatric guttate psoriasis, expanding the therapeutic options available for this patient population. These results could guide future clinical research and contribute to the development of more personalized therapeutic approaches for the management of pediatric psoriasis

REFERENCES

1. Menter, A., Korman, N. J., Elmets, C. A., et al. (2008). Psoriasis and psoriatic arthritis: epidemiology and pathogenesis. Journal of the American Academy of Dermatology, 58(5), 826-840. doi:10.1016/j.jaad.2008.01.015.

2. Rachakonda, T. D., Schupp, C. W., & Armstrong, A. W. (2014). Psoriasis in children: a retrospective study of the current state of treatment. International Journal of Dermatology, 53(7), 862-868. doi:10.1111/ijd.12311.

3. Goleva, E., Leung, D. Y. M., & Martin, J. N. (2013). Off-label medications for the treatment of psoriasis. Journal of the American Academy of Dermatology, 68(4), 686-691. doi:10.1016/j.jaad.2012.09.047.

4. Chiu, M. W., & Clyne, S. E. (2017). Treatment adherence in psoriasis: A systematic review. Journal of the American Academy of Dermatology, 76(1), 59-67. doi:10.1016/j.jaad.2016.08.022.

5. Tzeng, H. F., & Chen, C. H. (2016). Calcipotriol/betamethasone dipropionate combination foam: a new topical agent for the treatment of plaque psoriasis. Journal of Drugs in Dermatology, 15(10), 12-18.

6. Seyger M, Abramovits W, Liljedahl M, Hoejen MN, Teng J. Safety and efficacy of fixed-dose combination calcipotriol (50 µg/g) and betamethasone dipropionate (0.5 mg/g) cutaneous foam in adolescent patients (aged 12 to <17 years) with plaque psoriasis: results of a phase II, open-label trial. J Eur Acad Dermatol Venereol. 2020 Sep;34(9):2026-2034. doi: 10.1111/jdv.16233.

7. Mercy, K. A., et al. (2013). Clinical Manifestations of Pediatric Psoriasis: Results of a Multicenter Study in the United States. Pediatric Dermatology, 30(6), 648-655. doi:10.1111/pde.12072.

8. Ko, H. K., et al. (2010). Clinical course of guttate psoriasis: Long-term follow-up study. The Journal of Dermatology, 37(12), 1110-1116. doi:10.1111/j.1346-8138.2010.00871.x.

9. Radosa, J. C., et al. (2011). The cholinergic system in guttate psoriasis with special reference to mast cells. Experimental Dermatology, 20(7), 569-577. doi:10.1111/j.1600-0625.2011.01283.x.

10. Guarino L, Amato S, Bennardo L, Nisticò SP, Sannio M, Cannarozzo G. An innovative microwave technology and a new handpiece for submental skin laxity treatment. J Plast Pathol Dermatol. 2024;20(2):63–8.

11. Borgia F, Amato S, Ventimiglia M, Cannarozzo G. Unilateral nevoid telangiectasia successfully treated with pulsed dye laser: case report and literature review. J Plast Pathol Dermatol. 2024;20(3):121–6.

12. Amato S, Bennardo L, Rizzuto G, Amore E, Ricupito A, Nisticò SP. Optimizing photodynamic therapy combining dual light activation of 5-aminolevulinic acid. J Plast Pathol Dermatol. 2024;20(3):131–4.

13. Amore E, Dattola A, Amato S, Azzella G, Pellacani G, Grieco T, et al. How to recognize "Atopic Psoriasis": a new entity treated with tralokinumab. J Plast Pathol Dermatol. 2024;20(3):135–8.

14. Amoruso, G. F., Nisticò, S. P., Iannone, L., Russo, E., Rago, G., Patruno, C., & Bennardo, L. (2021). Ixekizumab May Improve Renal Function in Psoriasis. Healthcare, 9(5), 543. https://doi.org/10.3390/healthcare9050543

15. Yan, Y., et al. (2018). The distinct role and regulatory mechanism of IL-17 and IFN-γ in the initiation and development of plaque vs guttate psoriasis. Journal of Dermatological Science, 92(1), 66-73. doi:10.1016/j.jdermsci.2018.07.001.

16. Damiani, G., et al. (2021). The Global, Regional, and National Burden of Psoriasis: Results and Insights From the Global Burden of Disease 2019 Study. Frontiers in Medicine, 8, 743180. doi:10.3389/fmed.2021.743180

REFERENCES

17. Ruiz-Romeu, E., et al. (2018). Microbe-Dependent Induction of IL-9 by CLA+ T Cells in Psoriasis and Relationship with IL-17A. Journal of Investigative Dermatology, 138(10), 2195-2205. doi:10.1016/j.jid.2017.08.048.

18. Aðalsteinsson, G. R., & Amir, H. (2017). Ustekinumab in the Treatment of Guttate Psoriasis and Crohn's Disease: A Case Report. Journal of Psoriasis and Psoriatic Arthritis, 1(2), 36-38. doi:10.1177/247553031700200202.

19. Campione, E., Cosio, T., Di Prete, M., Lanna, C., Dattola, A., & Bianchi, L. (2021). Experimental Pharmacological Management of Psoriasis. Journal of experimental pharmacology, 13, 725–737. https://doi.org/10.2147/JEP.S265632

20. Dattola A, Tolone M, Amore E, et al. Interleukin-13 Inhibitors in the Treatment of Atopic Dermatitis: The Role of Tralokinumab. Dermatol Pract Concept. 2024;14(3):e2024204. Published 2024 Jul 1. doi:10.5826/dpc.1403a204

21. Dastoli, S., Nisticò, S. P., Morrone, P., Patruno, C., Leo, A., Citraro, R., Gallelli, L., Russo, E., De Sarro, G., & Bennardo, L. (2022). Colchicine in Managing Skin Conditions: A Systematic Review. Pharmaceutics, 14(2), 294. https://doi.org/10.3390/pharmaceutics14020294

22. Dattola, A., Altobelli, S., Marsico, S., Plastina, D., Nistico, S. P., Cavallo, A., Floris, R., Bianchi, L., & Guazzaroni, M. (2017). Hypodermal Adipose Tissue Sonoelastography for Monitoring Treatment Response in Patients with Plaque Psoriasis. Photomedicine and laser surgery, 35(9), 484–491. https://doi.org/10.1089/pho.2016.4261

23. Campione, E., Mazzilli, S., Di Prete, M., Dattola, A., Cosio, T., Lettieri Barbato, D., Costanza, G., Lanna, C., Manfreda, V., Gaeta Schumak, R., Prignano, F., Coniglione, F., Ciprani, F., Aquilano, K., & Bianchi, L. (2022). The Role of Glutathione-S Transferase in Psoriasis and Associated Comorbidities and the Effect of Dimethyl Fumarate in This Pathway. Frontiers in medicine, 9, 760852. https://doi.org/10.3389/fmed.2022.760852

24. Napolitano, M., Fabbrocini, G., Potestio, L., Fontanella, G., Picone, V., Bennardo, L., Scalvenzi, M., & Patruno, C. (2022). A 24-weeks real-world experience of dupilumab in adolescents with moderate-to-severe atopic dermatitis. Dermatologic therapy, 35(8), e15588. https://doi.org/10.1111/dth.15588

25. Burlando, M., Fabbrocini, G., Marasca, C., Dapavo, P., Chiricozzi, A., Malvaso, D., Dini, V., Campanati, A., Offidani, A., Dattola, A., Caro, R. D. C., Bianchi, L., Venturini, M., Gisondi, P., Guarneri, C., Malara, G., Trifirò, C., Malagoli, P., Fargnoli, M. C., Piaserico, S., … Parodi, A. (2022). Adalimumab Originator vs. Biosimilar in Hidradenitis Suppurativa: A Multicentric Retrospective Study. Biomedicines, 10(10), 2522. https://doi.org/10.3390/biomedicines10102522

26. Cassalia, F.; Federico, S.; Danese, A.; Franceschin, L.; Amato, S.; Gratteri, F.; Battilotti, C.; Caroppo, F.; Zappia, E.; Bennardo, L.; et al. Advances in the Management of Localized Scleroderma: A Systematic Review of Laser Therapy and Injectable Filler Approaches. J. Pers. Med. 2024, 14, 872. https://doi.org/10.3390/jpm14080872

27. Amato S, Zappia E, Bennardo L, Silvestri M, Passante M, Nisticò SP. y and photoprotection. J Plast Pathol Dermatol. 2024;20(2):75–9.

REFERENCES

28. Amato S, Passante M, Zappia E, Bennardo L, Rizzuto F, Tamburi F, et al. Photoprotection: which filters to use? J Plast Pathol Dermatol. 2024;20(2):81–6.

29. Marigliano M, Zappia E, Amato S, Bennardo L, Nisticò SP. A new 675 nm laser source: dermatological and haestetic applications. J Plast Pathol Dermatol. 2022;18(1):41–3.

30. Muneem, M. M., et al. (2020). A Case of Lichen Planus Masquerading as Guttate Psoriasis. Cureus, 12(9), e11206. doi:10.7759/cureus.11206.

31. Bennardo, L., Passante, M., Cameli, N., Cristaudo, A., Patruno, C., Nisticò, S. P., & Silvestri, M. (2021). Skin Manifestations after Ionizing Radiation Exposure: A Systematic Review. Bioengineering (Basel, Switzerland), 8(11), 153. https://doi.org/10.3390/bioengineering8110153

32. Brummer, A., et al. (2017). Ustekinumab-induced remission of recalcitrant guttate psoriasis: A case series. JAAD Case Reports, 3(3), 273-275. doi:10.1016/j.jdcr.2017.06.015.

33. Maciejewska-Radomska, A., et al. (2015). Frequency of streptococcal upper respiratory tract infections and HLA-Cw06 allele in patients with guttate psoriasis. Advances in Dermatology and Allergology, 32(6), 482-486. doi:10.5114/pdia.2014.40982.

34. Tollefson, M. M., et al. (2010). Incidence of psoriasis in children: A population-based study. Journal of the American Academy of Dermatology, 63(1), 62-66. doi:10.1016/j.jaad.2009.07.029.

35. Haurie, P., et al. (2024). Off-label treatments for pediatric psoriasis: A systematic review. Pediatric Dermatology.

36. Kim, Y. C., et al. (2010). Clinical comparison of psoriasis in Korean adults and children: correlation with serum anti-streptolysin O titers. Archives of Dermatological Research, 302(1), 23-29. doi:10.1007/s00403-009-1025-8.

37. Choe, Y., et al. (2012). A comparison of serum inflammatory cytokines according to phenotype in patients with psoriasis. British Journal of Dermatology, 167(4), 884-889. doi:10.1111/j.1365-2133.2012.11038.x.

38. Harrison, B. (2022). COVID-19: A New Etiology for Guttate Psoriasis. Journal of Dermatology for Physician Assistants, 15(3), 45-48. doi:10.58744/001c.70408.

39. Wu, L., et al. (2024). Rare MED12L Variants Are Associated with Susceptibility to Guttate Psoriasis in the Han Chinese Population. Dermatology, 240(1), 49-55. doi:10.1159/000538805.

40. Simões, M. C., et al. (2015). The role of tonsillectomy in psoriasis treatment. BMJ Case Reports, 2015, bcr2014205953. doi:10.1136/bcr-2014-206899.

41. Sitton, K. K., et al. (2024). Antistreptococcal treatment of psoriasis: a systematic review. Archives of Dermatological Research, 316(2), 109-128. doi:10.1007/s00403-024-03051-8.

42. Gutiérrez, J. D., et al. (2019). Review of the Pathogenesis of Psoriasis: Traditional Approaches and New Insights. Frontiers in Immunology, 10, 599. doi:10.3389/fimmu.2019.00599.*

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Alopecia areata: Esperienza sul territorio

Michele Pezza

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ABSTRACT

L'alopecia areata è una patologia immunomediata. I suoi meccanismi fisiopatologici sono oggetto di studi che hanno recentemente portato alla scoperta di nuove opzione terapeutiche.
Se è vero come è vero che la ricerca scientifica sta producendo valide alternative terapeutiche per l'alopecia areata e' pur vero che il lavoro si concentra sempre sulla cascata infiammatorio e non sul fattore scatenante che spesso innesca tale cascata.

Alopecia areata is an immune-mediated disease. Its physiopathological mechanisms are the subject of studies that have recently led to the discovery of new therapeutic options.
While it is true that scientific research is producing valid therapeutic alternatives for alopecia areata, it is also true that the work always focuses on the inflammatory cascade and not on the triggering factor that often triggers this cascade.

KEYWORDS
Alopecia areata, baricitinib, Jak inhibitor

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ARTICOLO

L'alopecia areata, è una patologia in cui la repentina caduta dei capelli, o di altri peli del corpo, si manifesta tipicamente a chiazze glabre o aree, da cui il nome.
Nell'1% circa dei casi la patologia può estendersi all'intero cuoio capelluto (alopecia totale, AT) o a tutto il corpo (alopecia universale, AU) con la totale perdita di tutti i peli del corpo.
La malattia, una delle più diffuse al mondo, soprattutto prima della quarta decade anche se si sono registrati casi in tutte le età, anche in bambini da 0 ai 5 anni (8,9).
Per quanto riguarda la sua incidenza è stato ipotizzato che l'1,7% della popolazione abbia avuto un caso di alopecia areata nella propria vita, la malattia non mostra preferenze per quanto riguarda il sesso, invece costituisce un fattore di rischio la sindrome di Down.
La malattia mostra anche familiarità.

Nella diagnosi differenziale dell'alopecia areata si devono escludere altre patologie che si manifestano in modi simili, quali:[1]

- Tinea capitis
- Tricotillomania (4)
- Lupus eritematoso discoide
- Sifilide secondaria
- Alopecia androgenetica

L'etiologia della malattia è ancora ignota.
Esistono certamente una serie di ipotesi:

I) Predisposizione genetica familiare
Nei gemelli monozigoti, la comparsa della malattia si ha abitualmente alla stessa età e con le stesse manifestazioni cliniche.
Nei pazienti colpiti da alopecia areata, è stata sottolineata la alta frequenza di antigeni, del sistema maggiore di istocompatibilità, HLA-DR4 e HLA-DR5 HLA-DR4 e HLA-DR5. Il sottotipo DPW4 manifesta una maggiore predisposizione ad ammalarsi delle forme più gravi.

II) Fattori stressogeni, emotivi e caratteriali
Non è ben chiaro ed ancora discusso il ruolo svolto dai fattori stressogeni, emotivi e caratteriali.
L'inibizione della adenilciclasi indotta da catecolamine liberate localmente può spiegare il blocco delle mitosi, per carenza di AMPc, con degenerazione acuta della matrice del pelo (5).

III) Alterazioni immunitarie
a) autoanticorpale
b) cellulomediata

IV) Danni a livello della guaina epiteliale interna
Un'ipotesi molto accredita è che l'alopecia areata sia l'espressione patologica che si manifesta in soggetti predisposi a malattie autoimmuni, per l'intervento delle stesse cause patogene che in soggetti normali non predisposti provocano un effluvio acuto in telogen.

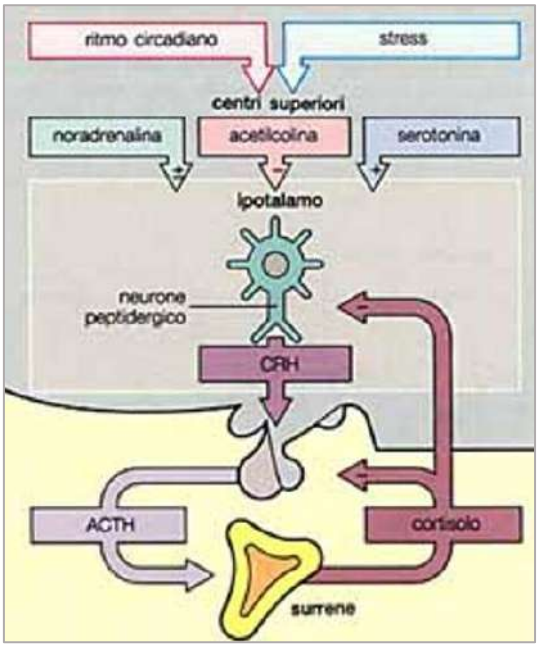
Oggi l'alopecia areata è fondamentalmente considerata una malattia autoimmune a patogenesi autoanticorpale e cellulomediata.
E' descritta l'associazione con molte patologie autoimmuni. I reperti istologici mostrano un infiltrato infiammatorio linfocitario verso i follicoli affetti dalla malattia.

I)Cheratinociti
Alcuni autori ritengono che il danno colpisca primitivamente i cheratinociti della matrice che danno origine alla corteccia del pelo.
(Messenger A. G.)

II)Melanociti
Altri autori ritengono possibile un ruolo dei melanociti, i quali sono presenti a livello della matrice del pelo solo durante la fase anagen (scomparendo quando il follicolo entra in catagen e tornando evidenti solo alla successiva ripresa dell'attività follicolare).
Si potrebbe pensare a una comunicazione paracrina tra cheratinociti e melanociti con un potenziamento vicendevole. Questo aiuta anche a capire come i peli ricrescono bianchi alla risoluzione della malattia (Messenger A. G.).

III Cellule endoteliali
Altri autori ritengono che le cellule endoteliali del plesso vascolare vengano primitivamente colpite dal processo autoimmunitario (Nickoloff B. J.) con passaggio negli spazi perivasali dei leucociti mononucleati.

IV Papilla dermica
Altri autori ritengono che la papilla dermica sia la cellula target della malattia avendo riscontrato alterazioni a carico dei proteoglicani della matrice extracellulare della papilla nei follicoli colpiti (Mc Donagh A. J. G.). Le possibili comorbidità evidenziate in Letteratura includono celiachia, diabete mellito di tipo 1, artrite reumatoide, psoriasi, artrite psoriasica, vitiligine, lupus eritematoso sistemico, fibromialgia, ipertiroidismo, tiroidite di Hashimoto, gastrite cronica atrofica autoimmune (6). I pazienti presentano molto spesso una personalità con tratti nevrotici, hanno spesso disturbi del sonno e comunque, quasi costantemente, dormono troppo poco, anche se di solito sono restii ad ammetterlo e devono essere direttamente interrogati in proposito (7).
Gli stessi pazienti dimostrano molto spesso alterazioni dei bioritmi circadiani di base (e di questi quello luce – buio -> sonno – veglia sono i ritmi guida) come il bioritmo dell'ACTH e del cortisolo.



L'alopecia areata si presenta in diverse forme, ciascuna caratterizzata da estensione e localizzazione specifiche.
La classificazione di queste varianti aiuta a comprendere la diversità clinica dell'affezione:
- Alopecia Areata Monolocularis: La forma più comune, presenta una singola area di forma circolare od ovale, con dimensioni comprese tra i 2 e i 5 centimetri. Di solito, si localizza sul cuoio capelluto, ma può manifestarsi anche su altre parti del corpo.
- Alopecia Areata Multilocularis: Colpisce più punti del cuoio capelluto, con lesioni multiple che, nel corso del tempo, possono convergere formando una singola lesione maggiore. Questa variante amplifica la complessità della presentazione clinica dell'alopecia areata.
- Alopecia Totale: Si caratterizza per la perdita completa dei capelli sul cuoio capelluto. Questa forma estrema può avere un impatto significativo sulla percezione estetica e sulla qualità della vita del paziente.
- Alopecia Areata Universale: Va oltre il cuoio capelluto coinvolgendo ogni parte del corpo, compresi peli ascellari, pubici, sopracciglia e ciglia. Questa variante rappresenta una sfida unica e può richiedere approcci di gestione diversificati.
- Alopecia Barbae: Tipicamente maschile, questa variante colpisce esclusivamente la barba, creando un'area di perdita di peli nella zona della mascella e delle guance.
- Alopecia Ophiasis: Caratterizzata dalla sua localizzazione sulla parte posteriore della testa, questa forma di alopecia areata può presentare un modello a forma di ferro di cavallo.

Le terapie ad oggi disponibili includono, i corticosteroidi topici e per via sistemica, altri immunomodulatori come la ciclosporina, il minoxidil e gli inibitori delle Janus Kinasi (3).
Negli ultimi anni diversi articoli scientifici hanno evidenziato anche il PRP (plasma ricco di piastrine) come possibile opzione terapeutica (3).
Un recente articolo ha evidenziato negli adolescenti e nei bambini affetti da alopecia areata le terapie descritte dimostrano una variabilita' di efficacia e molti pazienti richiedono una combinazione di terapie per avere risultati ottimali (2)

L'introduzione di farmaci a base di inibitori della Janus chinasi (JAK) è sicuramente tra gli approcci più innovativi nella cura dell'alopecia areata.
Di particolare rilevanza il Baricitinib, un doppio inibitore che agisce in modo selettivo e reversibile sugli enzimi JAK1 e JAK2; modulando questi due enzimi si modifica la produzione di citochine implicate nella patogenesi di diverse malattie autoimmuni, tra cui l'alopecia areata (10).

• Il Baricitinib inibisce gli enzimi Janus chinasi (JAK), tirosin-chinasi intracellulari coinvolti nell'emopoiesi e nella funzione delle cellule immunitarie attraverso una via di segnalazione.

• L'inibizione delle JAK previene la fosforilazione e l'attivazione delle STAT e riduce i marcatori infiammatori, IgG, IgM, IgA e proteina C-reattiva nel siero (32,33).

Nell'AA, baricitinib modula la via di segnalazione a livello delle JAK, prevenendo l'attivazione delle STAT e interferendo così con la via che porta all'infiammazione.

Se è vero come è vero che la ricerca scientifica sta producendo valide alternative terapeutiche per l'alopecia areata è pur vero che il lavoro si concentra sempre sulla cascata infiammatorio e non sul fattore scatenante che spesso innesca tale cascata.
A tale proposito una recente review ci ricorda che è fondamentale continuare a studiare i meccanismi fisiopatologici della alopecia areata al fine di trovare opzioni terapeutiche che consentano remissioni dalla patologia di lunga durata. (1)
Infatti, anche gli inibitori delle JAK, non intervenendo sulle cause della malattia, non garantiscono un effetto duraturo dal momento in cui la terapia viene sospesa.
La prescrivibilità dei JAK inibitori ad oggi non sempre è possibile sul territorio. Tale ostacolo è superabile con una più stretta collaborazione tra dermatologi territoriali, ospedalieri e universitari al fine di mettere al centro il paziente. È questo uno degli obiettivi della Associazione Dermatologi Campani (ADECA) che da anni opera su tutto il territorio nazionale al fine di creare una rete tra i dermatologi e consentire una migliore efficacia terapeutica

REFERENCES

1. *Lifestyle Factors Involved in the Pathogenesis of Alopecia Areata. Minokawa Y, Sawada Y, Nakamura M. Int J Mol Sci. 2022 Jan 18;23(3):1038*

2. *Treatment Options for Alopecia Areata in Children and Adolescents Linnea L Westerkam [1], Diana B McShane [2], Elizabeth L Nieman [2], Dean S Morrelli [2] Paediatr drugs 2024*

3. *2021 Dec;61(3):403-423.Clin Exp Med Review Alopecia Areata: an Update on Etiopathogenesis, Diagnosis, and Management Cheng Zhou , Xiangqian Li , Chen Wang , Jianzhong Zhang*

4. *European expert consensus statement on the systemic treatment of alopecia areata. Rudnicka L, Arenbergerova M, Grimalt R, Ioannides D, Katoulis AC, Lazaridou E, Olszewska M, Ovcharenko YS, Piraccini BM, Prohic A, Rakowska A, Reygagne P, Richard MA, Soares RO, Starace M, Vañó-Galvan S, Waskiel-Burnat A.J Eur Acad Dermatol Venereol. 2024 Apr;38(4):687-694. Review.*

5. *Janus kinase inhibitors for alopecia areata. King BA, Craiglow BG.J Am Acad Dermatol. 2023 Aug; Review.*

6. *Alopecia Areata: An Updated Review for 2023. Sibbald C.J Cutan Med Surg. 2023 May-Jun;27(3):241-259.. Review.*

7. *Alopecia Areata. Gaurav A, Eang B, Mostaghimi A.JAMA Dermatol. 2024 Mar 1;160(3):372.*

8. *Alopecia Areata. Current situation and perspectives.*

9. *Juárez-Rendón KJ, Rivera Sánchez G, Reyes-López MÁ, García-Ortiz JE, Bocanegra-García V, Guardiola-Avila I, Altamirano-García ML.Arch Argent Pediatr. 2017 Dec 1;115(6):e404-e411.. Review.*

10. *Baricitinib for the Treatment of Alopecia Areata. Freitas E, Guttman-Yassky E, Torres T.Drugs. 2023 Jun;83(9):761-770. dReview.*

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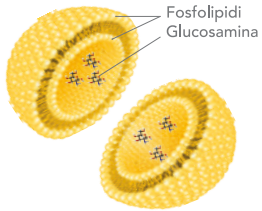
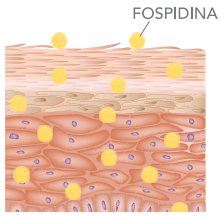
L'innovazione scientifica della linea SKINIUS THE DOCTOR IS IN è il complesso Fospidina, a base di fosfolipidi e glucosamina, messo a punto dopo oltre 30 anni di ricerche in biologia cellulare e in dermatologia. Agisce sia come attivo anti-aging che come veicolante per massimizzare le prestazioni della glucosamina, precursore dell'acido ialuronico.

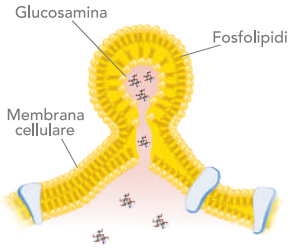


COME AGISCE

I fosfolipidi si dispongono in doppio strato a costituire una sfera cava (liposoma) all'interno della quale si posizionano le molecole di glucosamina.



Il liposoma penetra negli strati più profondi trasportando la glucosamina, che favorirà la produzione di nuovo acido ialuronico e la fisiologica rigenerazione cellulare.



Il liposoma, che è costituito da fosfolipidi come le membrane cellulari, si integra facilmente con la membrana cellulare creando un canale attraverso cui passa la glucosamina.

Fonte: B. Mandalari e D. Tedeschi, Journal of Plastic Dermatology joined with Update in Plastic Surgery, vol 12, 2, 2016 Fosfolipidi, glucosamina, fitoestrogeni e rigenerazione cutanea

RUGHE

-12,3% Profondità media

-16% Rughe superficiali

ELASTICITÀ CUTANEA

+6,8% 30-49 anni

+8,1% 50-70 anni

IDRATAZIONE CUTANEA

-93% Evaporazione dell'acqua (TEWL)

+7% Idratazione profonda

+8,9% Idratazione superficiale

Fonte: A. Di Pietro e I. Luppino, Journal of Plastic Dermatology, vol 10, 1, 2014
Studio sull'effetto di un gel a base di Fospidina (complesso di fosfolipidi, glucosamina, fitoestrogeni) nel miglioramento di elasticità cutanea, idratazione superficiale e profonda, rughe superficiali. Studio specifico su 160 volontari – 130 donne e 30 uomini

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LC-OCT as a Rapid Diagnostic Tool in Psoriasis: A case report

Simone Amato

Simone Amato[1], Luca Guarino[1], Annunziata Dattola[1]

ABSTRACT

Background: Psoriasis is a chronic inflammatory skin disease characterized by erythematous-desquamative plaques, which can significantly impact patients' quality of life. While clinical diagnosis is typically straightforward, cases with atypical presentation may require additional diagnostic methods. Line-field confocal optical coherence tomography (LC-OCT) is a novel, non-invasive imaging technology that provides high-resolution, in vivo visualization of skin microstructures, serving as a potential alternative to histopathology.
Case Report: We present the case of a 35-year-old woman with multiple erythematous-desquamative lesions on her face and back, raising suspicion for psoriasis. Dermoscopic examination revealed classic psoriatic features, and LC-OCT imaging confirmed the diagnosis by identifying hallmark microscopic features, including hyperkeratosis, acanthosis, hypogranulosis, parakeratosis, and elongation of rete ridges. The patient was reassured and prescribed a topical therapy consisting of calcipotriol and betamethasone, with scheduled follow-up to assess treatment response.
Conclusion: This case highlights the utility of LC-OCT as a rapid, non-invasive diagnostic tool in psoriasis, offering real-time confirmation of key histological features without the need for an immediate biopsy. The integration of LC-OCT in clinical practice has the potential to enhance diagnostic accuracy, improve patient comfort, and support therapeutic monitoring.

KEYWORDS
lc-oct, psoriasis, dermoscopy

CASE PRESENTATION

A 35-year-old woman presented with multiple round erythematous-desquamative lesions on her face (**Figure 1**) and a single similar lesion on her back (**Figure 2**). The lesions were well-demarcated, red plaques with overlying silvery-white scales. They were mildly pruritic, but the patient had no psoriatic arthritis or significant medical history. Dermoscopic examination of the plaques showed numerous punctate red dotted vessels on a light red background (**Figure 1b-2b**), a combination highly characteristic of psoriasis (reported with approximately 80–88% specificity and 85% sensitivity). The strong dermoscopic clues raised suspicion for psoriasis, although facial involvement is relatively uncommon and can mimic other conditions. To rapidly confirm the diagnosis non-invasively, we employed line-field confocal optical coherence tomography (LC-OCT). This innovative imaging method allowed in vivo visualization of skin microstructure within minutes, essentially providing an "optical biopsy" at the bedside.

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LC-OCT scanning of the patient's facial lesion revealed epidermal changes consistent with psoriasis, as detailed below, which promptly confirmed the diagnosis without need for an immediate skin biopsy

Figure 1 A B

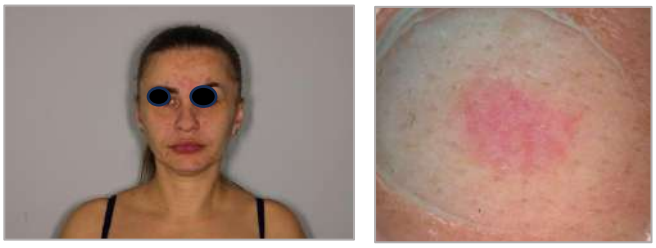
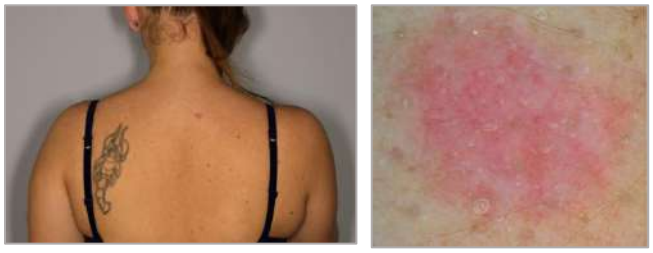


Figure 2 A B



Psoriasis is a common chronic inflammatory skin disease affecting about 2–3% of the worldwide population. It typically follows a relapsing-remitting course and presents with well-demarcated erythematous papules and plaques covered by silvery-white scales, often on the scalp, elbows, knees, and lower back.

Psoriasis is an immune-mediated disorder driven by complex interactions between keratinocytes and the immune system. In particular, dysregulation of Th1 and Th17 cells—fueled by key cytokines such as tumor necrosis factor-α (TNF-α), interleukin-23, and interleukin-17—leads to keratinocyte hyperproliferation and sustained inflammation in the skin.

This results in the characteristic epidermal thickening (acanthosis) with parakeratotic scale and inflammatory infiltrates observed on histopathology of psoriatic lesions.

Psoriasis can significantly impact patients' quality of life, and an accurate diagnosis is important to guide therapy. Diagnosis is usually made clinically, based on the appearance of the lesions, and can be aided by dermoscopy and, if uncertain, confirmed by skin biopsy. In recent years, advanced imaging techniques have emerged to non-invasively visualize psoriatic skin changes in vivo, potentially complementing or reducing the need for biopsy.

Line-field confocal optical coherence tomography (LC-OCT) is a novel, non-invasive skin imaging technology that combines the principles of traditional optical coherence tomography and reflectance confocal microscopy. LC-OCT uses a linear illumination and detection scheme to produce real-time, high-resolution images of the skin at both vertical cross-sections and horizontal (en face) planes. It achieves near-cellular resolution (~1 μm lateral) comparable to confocal microscopy, while penetrating up to around 500 μm into the tissue, thus visualizing the entire epidermis and superficial dermis.

Key advantages of LC-OCT for dermatologic imaging include:

High resolution, "in vivo histology": It produces images approaching histopathologic resolution, allowing visualization of cellular details and skin architecture.

Dual orientation imaging: The device can instantaneously switch between vertical section views (similar to conventional OCT histologic sections) and horizontal en face views (similar to confocal microscopy), providing a comprehensive evaluation of lesion structure.

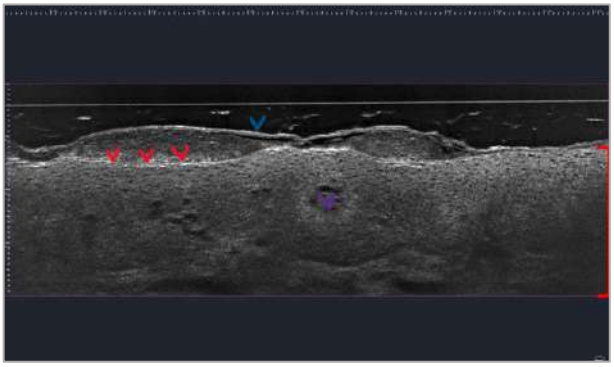
Rapid, non-invasive operation: LC-OCT scanning is painless and takes only a few minutes, yielding immediate results and avoiding the delays of biopsy processing.

Handheld accessibility: Modern LC-OCT devices are compact, handheld probes that can easily image almost any body area, integrating a dermoscopy-like surface view to help target the region of interest.

3D reconstruction: The system can acquire serial images to reconstruct three-dimensional views of skin lesions in seconds, which can be useful for volumetric assessment and monitoring changes over time.
In dermatology, LC-OCT has been applied not only to skin tumors but also to inflammatory dermatoses. It effectively bridges the gap between surface examination (dermoscopy) and invasive histology by providing an "optical section" of the skin with nearly microscopic detail.
Additionally, AI-powered integration is now available, allowing automated recognition of specific structures to assist in diagnosis.
Currently, this tool is trained to identify basal cell carcinoma (BCC), with ongoing developments to expand its application to other dermatologic conditions. In summary, LC-OCT offers clinicians an innovative tool for real-time diagnosis and management of skin diseases, improving diagnostic confidence while sparing patients unnecessary biopsies.

LC-OCT in Psoriasis Diagnosis
Recent studies and case series demonstrate that LC-OCT is a valuable tool for identifying key microscopic features of inflammatory skin diseases in vivo. In psoriasis, LC-OCT imaging reveals a set of hallmark findings that closely mirror the classic histopathological changes of the disease. Notably, recent reports, including those published in PubMed, describe characteristic features of psoriasis identified through LC-OCT, further reinforcing its diagnostic utility. In our patient's lesions, LC-OCT provided clear visualization of the following characteristics:
Hyperkeratosis: a thickened stratum corneum with a highly reflective surface corresponded to the clinically observed scale.
Acanthosis: diffuse epidermal hyperplasia was evident as an expanded viable epidermis (increased distance between the skin surface and dermal papillae tips). Notably, the keratinocyte nuclei within the epidermis appeared uniformly organized without atypia, consistent with the regular epidermal differentiation seen in psoriasis.
Elongated rete ridges: the dermal-epidermal junction (DEJ) was undulating due to elongation of dermal papillae upward into the thickened epidermis.
This psoriasiform architecture (surface undulation with club-shaped rete ridges) is a diagnostic histologic hallmark of psoriasis.
LC-OCT examination of the patient's lesions revealed multiple histopathologic correlates characteristic of psoriasis, further reinforcing the diagnosis.
In **Figure 3**, key features included hypogranulosis, indicating a reduction in the granular layer typical of psoriatic epidermal remodeling, parakeratosis, demonstrating retention of nuclei in the stratum corneum due to abnormal keratinocyte maturation, ectasia of capillary vessels, reflecting the increased dermal vascularization frequently observed in psoriasis, and acanthosis, signifying the pronounced thickening of the epidermis with an expanded rete ridge pattern.

Figure 3

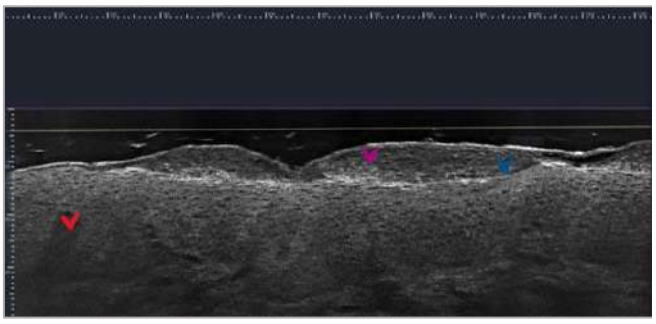


Red arrows: highlight hypogranulosis, referring to the reduction of the granular layer in the epidermis.
Blue arrow: indicates parakeratosis, characterized by the persistence of nuclei in the stratum corneum cells.
Fuchsia arrow: marks the presence of capillary ectasia, a typical vascular alteration associated with inflammatory processes.
Red section: outlines acanthosis.

In **Figure 4**, additional findings such as papillomatosis, characterized by the undulating architecture of the epidermal surface, parakeratosis, confirming persistent nuclear remnants in the cornified layer, and hypogranulosis, underscoring the defective granular layer differentiation, were evident.

These structural alterations are highly consistent with the pathophysiological mechanisms underlying psoriatic plaque formation and mirror traditional histopathological findings, further highlighting the utility of LC-OCT as a non-invasive diagnostic adjunct.

Figure 4



Red arrow: highlights papillomatosis, referring to the undulating appearance of the epidermis due to elongated rete ridges.
Blue arrow: indicates hypogranulosis, characterized by the reduction of the granular layer in the epidermis.
Fuchsia arrow: marks the presence of parakeratosis, defined by the persistence of nuclei in the cells of the stratum corneum.

Conclusion

Following the confirmation of psoriasis through LC-OCT, the patient was reassured about the benign and manageable nature of her condition.
Given the mild nature of her lesions and the absence of systemic involvement, a topical treatment regimen was initiated. The patient was prescribed a combination of calcipotriol and betamethasone, a well-established therapy that effectively reduces inflammation while promoting keratinocyte differentiation.
She was advised on proper application techniques and scheduled for follow-up to assess treatment response and ensure optimal disease control.

REFERENCES

1. Verzì, A. E., Broggi, G., Micali, G., Sorci, F., Caltabiano, R., & Lacarrubba, F. (2022). Line-field confocal optical coherence tomography of psoriasis, eczema and lichen planus: A case series with histopathological correlation. Journal of the European Academy of Dermatology and Venereology, 36(10), 1884–1889. https://doi.org/10.1111/jdv.18293

2. Orsini, C., Trovato, E., Cortonesi, G., Pedrazzani, M., Suppa, M., Rubegni, P., Tognetti, L., & Cinotti, E. (2024). Line-field confocal optical coherence tomography: New insights for psoriasis treatment monitoring. Journal of the European Academy of Dermatology and Venereology, 38(2), 325–331. https://doi.org/10.1111/jdv.19568

3. Marigliano M, Zappia E, Amato S, Bennardo L, Nisticò SP. A new 675 nm laser source: dermatological and haestetic applications. J Plast Pathol Dermatol. 2022;18(1):41–3.

4. Wirsching, H. B., Mayer, O. J., Schlingmann, S., Thamm, J. R., Schiele, S., Rubeck, A., & Heinz, W. (2025). Line-field confocal optical coherence tomography of plaque psoriasis under IL-17 inhibitor therapy: Artificial intelligence-supported analysis. Applied Sciences, 15(2), 535. https://doi.org/10.3390/app15020535

5. Cappilli, S., Paradisi, A., Di Stefani, A., Palmisano, G., Pellegrino, L., D'Onghia, M., Ricci, C., Tognetti, L., Verzì, A. E., & Rubegni, P. (2024). Line-field confocal optical coherence tomography: A new skin imaging technique reproducing a "virtual biopsy" with evolving clinical applications in dermatology. Diagnostics, 14(16), 1821. https://doi.org/10.3390/diagnostics14161821

REFERENCES

6. Dattola A, Tolone M, Amore E, et al. Interleukin-13 Inhibitors in the Treatment of Atopic Dermatitis: The Role of Tralokinumab. Dermatol Pract Concept. 2024;14(3):e2024204. Published 2024 Jul 1. doi:10.5826/dpc.1403a204

7. Guarino L, Amato S, Bennardo L, Nisticò SP, Sannio M, Cannarozzo G. An innovative microwave technology and a new handpiece for submental skin laxity treatment. J Plast Pathol Dermatol. 2024;20(2):63–

8. Borgia F, Amato S, Ventimiglia M, Cannarozzo G. Unilateral nevoid telangiectasia successfully treated with pulsed dye laser: case report and literature review. J Plast Pathol Dermatol. 2024;20(3):121–6.

9. Amato S, Bennardo L, Rizzuto G, Amore E, Ricupito A, Nisticò SP. Optimizing photodynamic therapy combining dual light activation of 5-aminolevulinic acid. J Plast Pathol Dermatol. 2024;20(3):131–4.

10. Amore E, Dattola A, Amato S, Azzella G, Pellacani G, Grieco T, et al. How to recognize "Atopic Psoriasis": a new entity treated with tralokinumab. J Plast Pathol Dermatol. 2024;20(3):135–8.

11. Latriglia, F., Ogien, J., Tavernier, C., Fischman, S., Suppa, M., Perrot, J.-L., & Dubois, A. (2023). Line-field confocal optical coherence tomography (LC-OCT) for skin imaging in dermatology. Life, 13(12), 2268. https://doi.org/10.3390/life13122268

12. Truong, T. M., Pathak, G. N., & Rao, B. K. (2023). Line-field confocal optical coherence tomography imaging findings of scalp psoriasis. JAAD Case Reports, 39, 106–108. https://doi.org/10.1016/j.jdcr.2023.06.050

13. Amato S, Passante M, Zappia E, Bennardo L, Rizzuto F, Tamburi F, et al. Photoprotection: which filters to use? J Plast Pathol Dermatol. 2024;20(2):81–6.

14. Campione, E., Cosio, T., Di Prete, M., Lanna, C., Dattola, A., & Bianchi, L. (2021). Experimental Pharmacological Management of Psoriasis. Journal of experimental pharmacology, 13, 725–737. https://doi.org/10.2147/JEP.S265632

15. Dattola, A., Altobelli, S., Marsico, S., Plastina, D., Nistico, S. P., Cavallo, A., Floris, R., Bianchi, L., & Guazzaroni, M. (2017). Hypodermal Adipose Tissue Sonoelastography for Monitoring Treatment Response in Patients with Plaque Psoriasis. Photomedicine and laser surgery, 35(9), 484–491. https://doi.org/10.1089/pho.2016.4261

16. Campione, E., Mazzilli, S., Di Prete, M., Dattola, A., Cosio, T., Lettieri Barbato, D., Costanza, G., Lanna, C., Manfreda, V., Gaeta Schumak, R., Prignano, F., Coniglione, F., Ciprani, F., Aquilano, K., & Bianchi, L. (2022). The Role of Glutathione-S Transferase in Psoriasis and Associated Comorbidities and the Effect of Dimethyl Fumarate in This Pathway. Frontiers in medicine, 9, 760852. https://doi.org/10.3389/fmed.2022.760852

17. Amato S, Zappia E, Bennardo L, Silvestri M, Passante M, Nisticò SP. y and photoprotection. J Plast Pathol Dermatol. 2024;20(2):75–9.

18. Burlando, M., Fabbrocini, G., Marasca, C., Dapavo, P., Chiricozzi, A., Malvaso, D., Dini, V., Campanati, A., Offidani, A., Dattola, A., Caro, R. D. C., Bianchi, L., Venturini, M., Gisondi, P., Guarneri, C., Malara, G., Trifirò, C., Malagoli, P., Fargnoli, M. C., Piaserico, S., … Parodi, A. (2022). Adalimumab Originator vs. Biosimilar in Hidradenitis Suppurativa: A Multicentric Retrospective Study. Biomedicines, 10(10), 2522. https://doi.org/10.3390/biomedicines10102522

REFERENCES

19. Mihu, C., Neag, M. A., Bocșan, I. C., Melincovici, C. S., Vesa, Ș. C., Ionescu, C., Baican, A. L., Lisencu, L. A., & Buzoianu, A. D. (2021). Novel concepts in psoriasis: Histopathology and markers related to modern treatment approaches. Romanian Journal of Morphology and Embryology, 62(4), 897–906. https://doi.org/10.47162/RJME.62.4.02

20. Gisondi, P., Gracia-Cazaña, T., Kurzen, H., & Galván, J. (2024). Calcipotriol/betamethasone dipropionate for the treatment of psoriasis: Mechanism of action and evidence of efficacy and safety versus topical corticosteroids. Journal of Clinical Medicine, 13(15), 4484. https://doi.org/10.3390/jcm13154484

21. Koo, J., Tyring, S., Werschler, W. P., Bruce, S., Olesen, M., Villumsen, J., & Bagel, J. (2016). Superior efficacy of calcipotriene and betamethasone dipropionate aerosol foam versus ointment in patients with psoriasis vulgaris: A randomized phase II study. Journal of Dermatological Treatment, 27(2), 120–127. https://doi.org/10.3109/09546634.2015.1083935

22. Rogalski, C. (2015). Calcipotriol/betamethasone for the treatment of psoriasis: Efficacy, safety, and patient acceptability. Psoriasis: Targets and Therapy, 5, 97–107. https://doi.org/10.2147/PTT.S63127

23. Cassalia, F.; Federico, S.; Danese, A.; Franceschin, L.; Amato, S.; Gratteri, F.; Battilotti, C.; Caroppo, F.; Zappia, E.; Bennardo, L.; et al. Advances in the Management of Localized Scleroderma: A Systematic Review of Laser Therapy and Injectable Filler Approaches. J. Pers. Med. 2024, 14, 872. https://doi.org/10.3390/jpm14080872

24. Amoruso, G. F., Nisticò, S. P., Iannone, L., Russo, E., Rago, G., Patruno, C., & Bennardo, L. (2021). Ixekizumab May Improve Renal Function in Psoriasis. Healthcare, 9(5), 543. https://doi.org/10.3390/healthcare9050543

25. Napolitano, M., Fabbrocini, G., Potestio, L., Fontanella, G., Picone, V., Bennardo, L., Scalvenzi, M., & Patruno, C. (2022). A 24-weeks real-world experience of dupilumab in adolescents with moderate-to-severe atopic dermatitis. Dermatologic therapy, 35(8), e15588. https://doi.org/10.1111/dth.15588

26. Dastoli, S., Nisticò, S. P., Morrone, P., Patruno, C., Leo, A., Citraro, R., Gallelli, L., Russo, E., De Sarro, G., & Bennardo, L. (2022). Colchicine in Managing Skin Conditions: A Systematic Review. Pharmaceutics, 14(2), 294. https://doi.org/10.3390/pharmaceutics14020294

27. Bennardo, L., Passante, M., Cameli, N., Cristaudo, A., Patruno, C., Nisticò, S. P., & Silvestri, M. (2021). Skin Manifestations after Ionizing Radiation Exposure: A Systematic Review. Bioengineering (Basel, Switzerland), 8(11), 153. https://doi.org/10.3390/bioengineering8110153

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