CASE REPORT

Disseminated granuloma annulare. Clinical experience in an adult patient

Melany Ayala,[*] Juan Diez De Medina,[**] Daniela Callisaya[*]

* *Third Level Hospital Chuquisaca. Sucre, Bolivia.*
** *Fundación Piel. La Paz, Bolivia.*

Correspondence:
Melany Liza Ayala Gonzales
melanyayala.95@gmail.com

Key words: Granuloma annulare, disseminated, dapsone, minocycline

How to cite this article: Ayala M., Diez De Medina J., Callisaya D. Granuloma anular diseminado. Experiencia clínica en un paciente adulto. - Reporte de un caso clínico. Rev Dermatol Cent Úraga. 2026;8(1).

Date of receipt: 26/2/2025
Date of acceptance: 3/3/2026

ABSTRACT

Granuloma annulare is a benign, self-limited inflammatory dermatosis of unclear etiology characterized by nodular lesions that coalesce into annular plaques. Five clinical variants have been described, among which the disseminated form is uncommon. Disseminated granuloma annulare (DGA) is defined by the presence of more than 10 lesions with characteristic morphology distributed throughout the body.

Although its association with dyslipidemia has not been fully established, dyslipidemia remains the most frequently reported comorbidity. Associations with malignant neoplasms, medications, viral infections, vaccines, mesotherapy, botulinum toxin injections, and certain HLA subtypes have also been described.

Therapeutic options are varied and include intralesional corticosteroids, tetracyclines, systemic retinoids, vitamin E, dapsone, biologic agents, laser therapy, and Janus kinase (JAK) inhibitors. In addition, nutritional counseling plays an important role because of the potential metabolic associations of this condition.

We report a case of disseminated granuloma annulare in a male patient successfully treated with dapsone and minocycline after exclusion of other potential causes.

INTRODUCTION

Granuloma annulare is a non-infectious, benign, and self-limited inflammatory disease of unclear etiology, characterized by the presence of nodular lesions that coalesce into plaques. It occurs more frequently in females and in individuals under 30 years of age.[1]

Cutaneous trauma, ultraviolet radiation, genetic predisposition, and associations with hematologic malignancies such as non-Hodgkin lymphoma, as well as solid tumors such as breast cancer and adenocarcinomas, play an important role in its pathogenesis. Associations with certain medications have also been described, including topiramate, nifedipine, amlodipine, calcitonin, allopurinol, levetiracetam, TNF-α inhibitors (infliximab, adalimumab, etanercept), secukinumab, and tocilizumab.

Additionally, several viruses have been implicated, including HIV, Epstein–Barr virus, hepatitis C virus, par-

vovirus B19, herpes simplex virus, SARS-CoV-2, and varicella-zoster virus. Finally, cases have been reported following the administration of vaccines against measles, rubella, mumps, and pneumococcus, as well as after procedures such as mesotherapy, phototherapy, and botulinum toxin injections.[1-4] Regarding the pathophysiology, the most accepted theory involves the participation of T lymphocytes, which produce TGF-β and IL-2. The generalized variant has been associated with the presence of HLA-B35 and HLA-B29.[1,2]

We present a new case of disseminated granuloma annulare successfully treated with dapsone and minocycline, and we share our clinical experience.

CLINICAL CASE

A 25-year-old male from the capital of Bolivia (Sucre), with no significant medical history, presented to the dermatology clinic with a one-month history of dermatosis characterized by intense pruritus accompanied by infiltrated and arciform plaques with an erythematous halo and a pale center. The lesions were disseminated on the arms, chest, abdomen, and legs, with the largest measuring 15 cm. (Figures 1-5)



Figure 1: Disseminated dermatosis involving the arms, forearms, abdomen, and legs, characterized by erythematous plaques, some with an arciform configuration.



Figure 2: Annular plaques with a pale center and arciform distribution on the thoracic and abdominal regions.



Figure 3: Erythematous plaques of varying diameter with a pale center and annular distribution on the right forearm.



Figure 4: Erythematous plaques of varying diameter on the inner region of the left arm and forearm.



Figure 5: Confluent arciform erythematous plaques on the inner region of the right thigh.

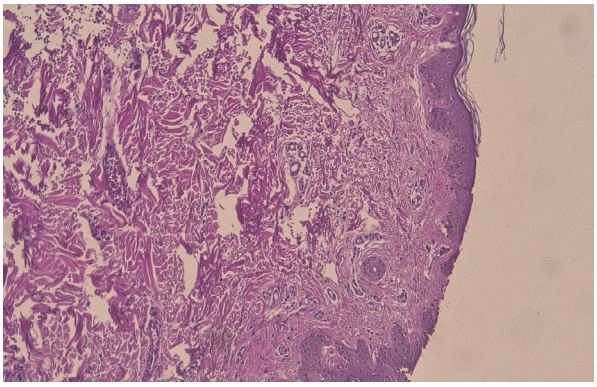


Figure 6: H&E stain. Preserved epidermis; in the dermis, collagen degeneration is observed, associated with a lymphocytic infiltrate with occasional histiocytes.

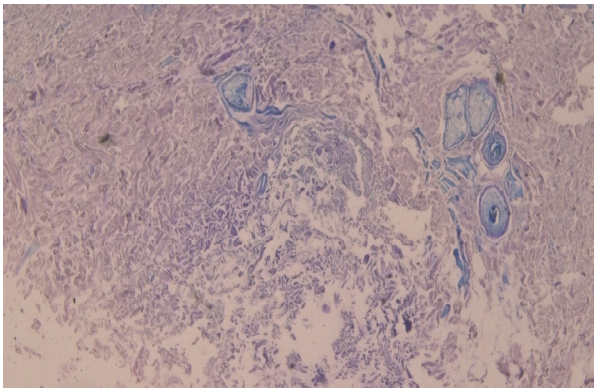


Figure 7: Alcian Blue stain: Mucin deposition in the dermis.

The patient received an oral prednisone pulse (1 mg/kg/day) for 10 days, with partial remission followed by exacerbation of the disease. Due to the clinical suspicion of granuloma annulare, a biopsy of an active lesion was performed. Histopathological examination revealed collagen degeneration associated with a lymphocytic infiltrate with occasional histiocytes and mild mucin deposition, findings compatible with granuloma annulare (Figures 6 and 7). The clinical and histopathological findings led to the diagnosis of disseminated granuloma annulare.

Laboratory evaluation revealed hypertriglyceridemia (202 mg/dL). Measurement of glucose-6-phosphate dehydrogenase (G6PD) levels could not be performed because the required reagent was unavailable at the time of evaluation. Treatment with dapsone 100 mg daily for 12 weeks was initiated, achieving remission of the disease. However, after 6 months, a recurrence of the lesions was observed on the left arm (Figure 8), while the rest of the body remained without relapse. Due to economic limitations, maintenance therapy with minocycline 100 mg/day was initiated. Currently, the patient remains without new exacerbations (Figures 9, 10, and 11). In addition, nutritional counseling was provided, including a hypocaloric and low-fat diet.



Figure 8: Six-month follow-up photograph. An infiltrated erythematous plaque is observed on the inner region of the left arm.



Figure 9: Six-month follow-up photograph. No evidence of dermatosis on the abdomen and anterior chest.



Figure 10: Six-month follow-up photograph. No evidence of active lesions on the right forearm.



Figure 11: Six-month follow-up photograph. No active lesions on the right thigh.

DISCUSSION

Granuloma annulare is a rare entity that affects approximately 1% of the population and presents with different clinical manifestations. Five clinical forms have been described: localized (the most common), disseminated, perforating, subcutaneous, and plaque-type variants. The disseminated form, which is rare and chronic, accounts for approximately 15% of cases and is characterized by more than 10 lesions distributed throughout the body. Lesions typically present as erythematous or skin-colored nodules that coalesce into plaques with annular or arciform configurations, accompanied or not by intense pruritus, and commonly affect the trunk, abdomen, and extremities.[1,3,4] Histopathological examination may reveal collagen degeneration, reactive inflammation, and fibrosis, as well as a focus of necrobiosis surrounded by palisading histiocytes and mucin deposition (the most important finding).[4]

Associations between disseminated granuloma annulare and dyslipidemia, diabetes mellitus, autoimmune thyroiditis, rheumatoid arthritis, systemic lupus erythematosus, and celiac disease have been documented.[1-3]

The differential diagnosis includes dermatofibroma, dermatomyositis, papulonecrotic tuberculid, Sweet syndrome, borderline leprosy, erythema elevatum diutinum, erythema marginatum, subcutaneous sarcoidosis, tinea corporis, annular erythema, among others.[4,5]

No treatment has proven to be completely effective. In some cases, lesion remission has been observed after biopsy of the lesions, cryotherapy, or even spontaneously (isomorphic phenomenon). The use of topical corticosteroids has been reported as first-line therapy, as well as intralesional triamcinolone, vitamin E, pentoxifylline, tacrolimus, isotretinoin, cyclosporine, interferon alpha, hydroxychloroquine, dapsone, tetracyclines, etanercept, and excimer laser therapy, all of which have low levels of evidence (level D).[1,2,5] Fumaric acid esters represent a new and promising therapeutic option.[6,7] Similarly, favorable results have been reported with immunomodulatory therapies such as apremilast, infliximab, methotrexate, and JAK inhibitors (topical and oral); however, none of them has demonstrated a 100% cure rate. Treatments with levels of evidence B and C include photodynamic therapy and dapsone.[8,9]

Regarding dapsone, published data indicate that many cases have improved after 4–12 weeks of treatment with an initial dose of 100 mg/day. Many patients remain free of recurrence after discontinuation of the drug, although this has not been fully studied. Its potential adverse effects (hemolytic anemia and methemoglobinemia) must be considered, as well as caution in patients with hepatic or renal impairment, pregnant women, and those with glucose-6-phosphate dehydrogenase deficiency or folic acid deficiency.[10–14]

The management of disseminated granuloma annulare remains challenging, and the available evidence suggests that the response to dapsone is controversial because the effects of the drug may not be durable or consistent. Although some authors propose it as a treatment option, there are still few case series supporting its use. While there is no definitive treatment for DGA, if dapsone is used appropriately and with periodic monitoring, it may be safe and, in some cases, achieve disease remission, without excluding the possibility of recurrence.[14]

In our case, the patient achieved clinical remission after 12 weeks of treatment with dapsone at 100 mg/day, with good tolerance and no recorded adverse reactions. After 6 months, recurrence was observed; however, continuation of dapsone therapy was not possible due to economic limitations. Therefore, treatment was switched to minocycline, with no documented exacerbation of the condition.

CONCLUSION

This case provides clinical evidence supporting the sequential use of dapsone and minocycline as an affordable therapeutic option for patients with limited economic resources.

REFERENCES

1. Trejo J., Gonzalez M., Figueroa E., Marín D., Granuloma anular diseminado. Rev Cent Dermatol Pascua 2019; 28 (2): 65-70.
2. Lopez L., Ramos A., Jaidar A. Granuloma anular diseminado con fenómeno de iatropismo. Comunicación de un caso. Rev Cent Dermatol Pascua. 2007. 16 (2).
3. Ortiz L., Quiroz L., Morán A., Loayza E. Granuloma Anular Diseminado: Reporte de caso y revisión de la literatura. 2023. Centro Dermatológico Dr. Uraga; 5 (2):1-8.
4. Joshi TP, Duvic M. Granuloma anular: una revisión actualizada de la epidemiología, la patogénesis y las opciones de tratamiento. Am J Clin Dermatol. 2022; 23(1):37-50.
5. Corigliano M., Achenbach R. Granuloma anular: un desafío diagnóstico y terapéutico. Rev. argent. dermatol. 2012; 93(4).
6. Kul A., De Greef A., Baeck M., Harkemanne E.. Granuloma anular subcutáneo familiar: informe de un caso de dos hermanos. Cureus. 2024; 16(10).

7. Trejo AJR, González GM, Figueroa BE. Dimetilfumarato utilizado como tratamiento eficaz para el granuloma anular diseminado: un estudio de caso inmunohistoquímico. Int J Mol Sci. 2023; 24(17): 1-8.
8. Blum S, Altman D. Treatment of generalized granuloma annulare with apremilast: A report of 2 cases. JAAD. 2019. 24;5(11): 976-978.
9. Saez M., Guarino M., Gijon C., Zato M., Olasolo J. Eficacia de la dapsona en el granuloma anular diseminado: presentación de un caso y revisión de la literatura. Actas Dermosifiliogr. 2008; 99 (1): 64-67.
10. Wang A, Singh K, Ibrahim W, King B, Damsky W. The Promise of JAK Inhibitors for Treatment of Sarcoidosis and Other Inflammatory Disorders with Macrophage Activation: A Review of the Literature. Yale J Biol Med. 2020;93(1):187-195.
11. Mukovozov IM, Kashetsky N, Richer V. Light- and laser-based treatments for granuloma annulare: A systematic review. Photodermatol Photoimmunol Photomed. 2022 Jul;38(4):301-310.
12. Molinelli E, Paolinelli M, Campanati A, Brisigotti V, Offidani A. Metabolic, pharmacokinetic, and toxicological issues surrounding dapsone. Expert Opin Drug Metab Toxicol. 2019 May;15(5):367-379.
13. Wozel G, Blasum C. Dapsone in dermatology and beyond. Arch Dermatol Res. 2014 Mar;306(2):103-24.
14. Hrin M, Bashyam A, Feldman SR. Oral dapsone for the treatment of generalized granuloma annulare: a retrospective case series. J Am Acad Dermatol. 2022;86(4):911-914.

ORCID

Melany Ayala https://orcid.org/0009-0002-8620-2780
Juan Diez De Medina https://orcid.org/0009-0005-9020-7439
Daniela Callisaya https://orcid.org/0009-0003-7577-8204