

Confluent annular lesion on the dorsum of the hand

A 48-year-old man came to the office with a pruritic lesion that had been on the dorsum of his hand for 2 months. He said that the lesion began as 2 flesh-colored papules that had coalesced to form a larger lesion.

He denied any recent trauma, foreign travel, insect bites, disseminated rashes, or systemic symptoms associated with the appearance of the lesion. His medical history was unremarkable, and

he indicated that he'd otherwise been feeling well.

His physical exam was significant for a 6 cm, violaceous annular confluent plaque with a firm, slightly raised border (**FIGURE 1**). There was no visible scale.

- **What is your diagnosis?**
- **How would you manage this condition?**

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FIGURE 1

Violaceous lesion on the hand



A 6 cm, violaceous annular confluent plaque with a firm, slightly raised border on the dorsum of the hand prompted this patient to seek treatment.

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The patient denied any recent trauma, foreign travel, or insect bites

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Granuloma annulare has been linked with trauma, viral infection, and diabetes

■ **Diagnosis:** **Granuloma annulare**

Granuloma annulare is a benign inflammatory skin condition classically described as annular papules and plaques. The lesions typically range from skin-colored to violaceous in appearance. There is no racial predilection for this condition.

There are 4 variants of granuloma annulare:

- The **localized** form—which our patient had—accounts for approximately 75% of cases.¹ Lesions are typically found on the lateral or dorsal surfaces of the hands and feet. Most cases of localized granuloma annulare occur in young adult women.²

The disease typically begins as an asymptomatic or mildly pruritic flesh-colored papule that undergoes central involution. Gradually, over a period of months, a ring of papules slowly expands to a diameter of 0.5 to 5 cm.

- The **generalized** (disseminated) form involves a number of lesions, and thus, is more widespread (**FIGURE 2**). Lesions tend to appear on the extremities and the trunk.

- The **perforating** form is rare, and occurs in both localized and generalized granuloma annulare. Papules may develop into lesions that exude a thick and creamy or clear and viscous fluid.

- The **subcutaneous** form presents as asymptomatic solitary lesions or in clusters that are most commonly found on the lower extremities—often on pretibial areas. The lesions with this form of granuloma annulare are deeper than the localized form, so there is more swelling, and less surface definition.

■ **Anecdotal reports link condition to diabetes**

Although the cause of granuloma annulare is unknown, it has been linked with trauma, thyroid disease, viral infection, malignancy, and diabetes mellitus. Some reports suggest that the lesions are the result of a delayed type hypersensitivity

reaction. Of note: Our patient had type 2 diabetes mellitus, something we only discovered while doing a work-up for his lesion. Though largely based on anecdote and case reports, retrospective studies have supported this association.^{3,4}

More recently however, a small case-control study failed to reveal any significant correlation between the 2.⁵ At this time, there is no indication to screen for diabetes in an otherwise asymptomatic patient.

■ **Differential Dx includes ringworm, Lyme disease**

Localized granuloma annulare must be differentiated from the most common annular lesion, tinea corporis, as well as other annular lesions, including necrobiosis lipoidica and erythema migrans.

- **Tinea corporis**, or ringworm, is a superficial fungal infection of the skin. Similar to granuloma annulare, patients present with a gradually enlarging annular, well-demarcated papular lesion. Ringworm can be distinguished from granuloma annulare by noting the presence of scale, and by performing a potassium hydroxide slide preparation, which would reveal septate hyphae.

- **Necrobiosis lipoidica** classically presents as annular violaceous plaques on the anterior legs, but may appear on the arms, hands, feet, or scalp. As the lesion expands, the advancing border becomes red and the central area typically develops a waxy yellow surface, with prominent telangiectasias. This lesion is generally flat or atrophic, and does not have the same raised border as is seen in granuloma annulare.

- **Erythema migrans** is the characteristic rash of early localized Lyme disease. This classic “bull’s-eye” rash is an annular lesion with concentric redness and expanding central clearing. Erythema migrans typically appears 7 to 10 days after a patient has been bitten by an infected tick. The classic red lesion starts as a small papule at the site of inocula-

tion, while the expanding ring remains flat and lacks the papular appearance of granuloma annulare.

While uncommon, cutaneous sarcoidosis should also be considered in the differential diagnosis. Cutaneous manifestations occur in up to 20% of patients with sarcoidosis.² The most common presentation is a maculopapular eruption involving the face. Lesions may also be nodular or plaque-like. Biopsy is necessary for diagnosis.

■ Clinical presentation typically clinches it

Diagnosis of granuloma annulare is often made by its characteristic clinical presentation. If the diagnosis is unclear, a skin biopsy may be needed. Histologic exam will reveal histiocytes in surrounding dermal tissue with increased mucin deposition.

■ Cosmetic concerns?

Localized lesions that are asymptomatic are often left to resolve spontaneously. If there are cosmetic concerns, or if there is significant pruritus, treatment options include intralesional steroid injection into the raised border with triamcinolone, occlusion therapy with clobetasol propionate, or liquid nitrogen therapy.

One small study of 31 patients with localized granuloma annulare showed resolution after 1 treatment with liquid nitrogen in 81% of patients.⁶ Topical steroids alone do not produce significant results.⁵ Other agents, including UV light and systemic medications, are available for the generalized form, however, none are curative and relapses are common.

■ No treatment for lesion; Metformin for diabetes

Our patient chose to have no treatment for his granuloma annulare, but we did put him on metformin for his diabetes. At

FIGURE 2

Generalized granuloma annulare



PHOTO BY RICHARD USATINE, MD

Generalized granuloma annulare with large rings on the arms of a 39-year-old woman. Both arms and feet were covered in these lesions.

a 3-month follow-up visit, our patient's lesion was unchanged in appearance.

Although the disease course is variable, 50% of patients with localized granuloma annulare will see spontaneous resolution within 2 years without scarring.⁷ ■

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No potential conflict of interest relevant to this article was reported.

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Half of patients with localized granuloma annulare will see spontaneous resolution within 2 years without scarring