Granuloma Annulare Skin Lesions in a Case of Sarcoidosis

Abstract

We report the case of a 32-year- old man with a short 3-week history of erythematous, annular, non scaly plaques on palmar and dorsal aspect of his hands, who was concurrently diagnosed as a case of sarcoidosis on the basis of findings of generalized lymphadenopathy and radiological and histological features of pulmonary sarcoidosis. His skin biopsy was consistent with the diagnosis of granuloma annulare. Sarcoidosis and granuloma annulare are two separate diseases, which involve the skin and have a mononuclear histiocytic cellular reaction, although their aetiology is still unknown. Granuloma annulare has been associated with the concomitant diagnosis of sarcoidosis in only two more case reports and this association can be evaluated further to study a common link in the aetipathogenesis of these two granulomatous skin diseases.

Keywords: *Granuloma annulare, granulomatous dermatoses, sarcoidosis*

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Introduction

Granuloma annulare is a benign granulomatous dermatosis of unknown etiology which typically presents in a localized form or a rarer generalized form. It has three distinctive histological patterns: an infiltrative (interstitial) pattern, a palisading granuloma pattern and an epithelioid nodule (sarcoidal granuloma) pattern.[1] Granuloma annulare most commonly presents on the hands or feet and consists of asymptomatic to mildly pruritic, flesh-colored to erythematous annular plaques.[2] Sarcoidosis also presents with skin lesions which mimic several dermatoses and the concomitant diagnosis of granuloma annulare along with sarcoidosis is rarely reported in literature. This finding in our patient hints towards the common aetiopathogenesis of these two separate granulomatous disorders.

Case Report

A 32 year-old male patient presented to our outpatient clinic with a 3-weeks history of insidious-onset annular skin lesions on the dorsal and palmar aspect of his hands with associated mild itching and fine scaling which did not regress with previously administered topical therapies. His general examination revealed generalized lymphadenopathy. Considering the age and clinical features of the patient, he was evaluated with the differential diagnosis of syphilis, sarcoidosis, erythema multiforme and granuloma annulare. His personal, and family history was unremarkable with no any complaints of respiratory distress or coughing. Dermatological examination revealed multiple erythematous, annular plaques varying in size from 1 to 3 cm in diameter localized on the dorsum and plantar aspect of palms with fine partly adherent dry scales. [Figures 1 and 2]. Skin biopsy was sent for histopathological examination. Histopathological examination of the biopsy material disclosed parakeratosis in the epidermis. Upper and mid dermis showed histiocytes dissecting between collagen bundles and areas of normal dermis intervening in between which is classically seen in the interstitial pattern of granuloma annulare. A mild perivascular and interstitial lymphocytic infiltrate was seen in the surrounding dermis with scattered neutrophils and eosinophils. The histopathological findings are shown in Figure 3 in the scanning view and Figure 4 shows the high-power magnification. On laboratory analysis, Erythrocyte Sedimentation Rate was raised and chest X-ray was suggestive of bilateral hilar lymphadenopathy. His serum ACE levels were increased and his Computed Tomography (CT) scan of chest and endoscopic biopsy of the hilar

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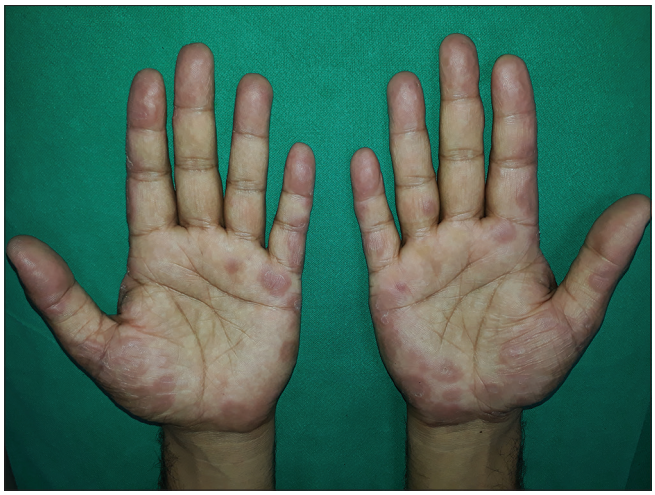

Figure 1: Annular, erythematous plaque lesions on palms of both hands with fine scaling

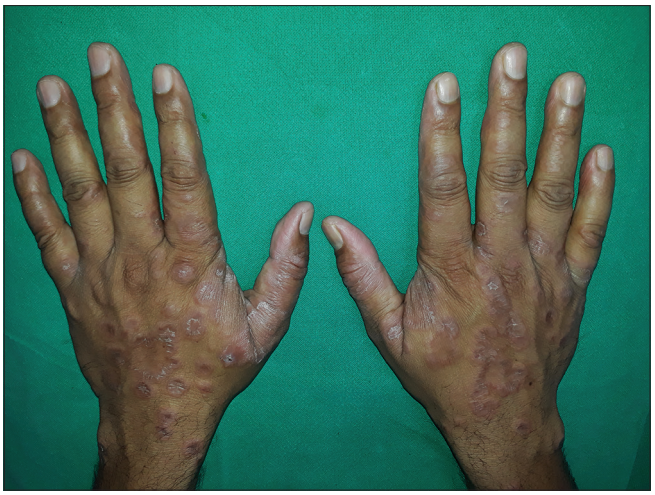

Figure 2: Annular erythematous plaque lesions on dorsum of both hands with fine scaling

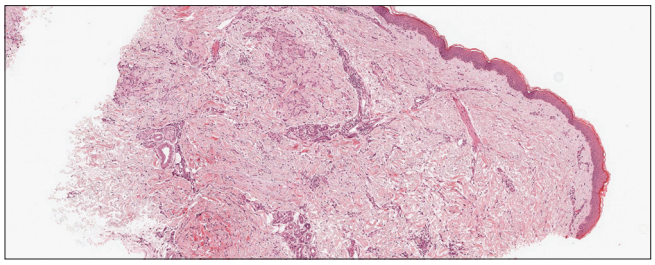

Figure 3: Histopathology of the skin lesion: Scanning view (×40) on Hematoxylin and eosin stain showing histiocytes in between the collagen bundles within the superficial and mid dermis

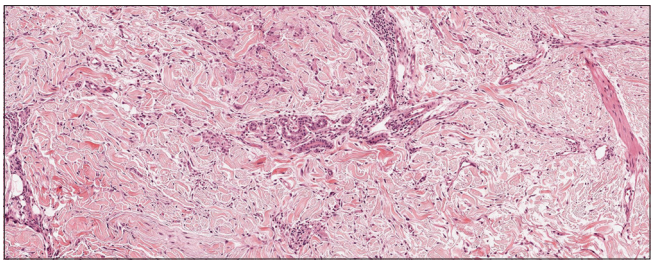

Figure 4: Histopathology of the skin lesion: Higher magnification (×100) on Hematoxylin and eosin stain showing histiocytes within areas of increased mucin deposition. A mild perivascular and interstitial lymphocytic infiltrate may be seen in the surrounding dermis with scattered neutrophils and eosinophils

lymphnode showed features of sarcoidosis. The skin biopsy was reviewed again in view of the features of systemic sarcoidosis. Gram stain, Ziehl-Neelsen and periodic aid Schiff stains were negative for any microorganism on the skin biopsy. The histological findings from the hilar lymph nodes were suggestive of sarcoidosis, however no features of cutaneous sarcoidosis were detected. The patient was also investigated extensively for secondary syphilis due to the morphology of his skin lesions over the hands and the generalized lymphadenopathy of the patient. However Venereal Disease Research Laboratory (VDRL) and Treponema pallidum Haem Agglutination (TPHA) tests were negative for syphilis and his Enzyme-linked immunosorbent assay (ELISA) for HIV was also negative.

Discussion

Granuloma annulare (GA) is a common skin disorder that classically presents as localized clusters of small papules, coalescing to form annular plaques. It often occurs symmetrically with asymptomatic lesions and two-thirds of patients are under 35 years of age. It is approximately twice more common in females than in males. Numerous clinical variants of granuloma annulare have been described with overlapping features including generalized, papular, nodular, patch, perforating and a subcutaneous variant of granuloma annulare. It often favors acral sites such as the dorsum of the hands, elbows and feet; however involvement of the palms appears to be rare.[3]

The cause of granuloma annulare is unknown, but it has been reported to follow viral infections (including HIV, Herpes and Epstein-Barr virus), malignancy, and trauma.[4] A delayed-type hypersensitivity reaction and cell-mediated immune response are hypothesized. Patients with associated diabetes mellitus have a higher incidence of chronic relapsing granuloma annulare as compared to patients without diabetes. Some isolated cases of granuloma annulare associated with malignant neoplasms such as lymphoma have been reported.[5]

Various clinical presentations of palmar granuloma annulare reported include painful acral papules, erythematous tender annular plaques, violaceous papules, indurated plaques, subcutaneous nodules, keratotic papules with central plug (Perforating granuloma annulare) etc.[3,6] In our patient, annular plaques and few targetoid lesions were the most common presentations followed by fine scaling over palmar and plantar aspect of both hands.

Occurrence of mitotic figures in granuloma annulare is rare but a well-known feature. Recognition of this is important

to avoid over diagnosis of malignant conditions, especially epitheloid sarcoma.[7]

This patient had features suggestive of sarcoidosis which was proved both by radiological and histopathological investigations mainly in the form of non-caseating epitheloid granulomas and negative microbiology reports. The Skin biopsy showed classical features of granuloma annulare. The patient was also evaluated for secondary syphilis based on the dermatological features, however both the screening and specific tests for syphilis were negative. The cutaneous histopathology was reviewed for features of erythema annulare centrifugum (given scaling of lesions) and erythema multiforme, however the macrophages dissecting between the collagen bundles in the dermis was classical for the histological diagnosis.

Three case reports have found an association of sarcoidosis with granuloma annulare. In the case reported by Kato *et al*.[8] there was no temporal association of the onset of granuloma annulare and sarcoidosis. However in the case reported by Umbert and Winkelmann[9] and Elliot *et al*.[10] the onset of granuloma annulare and sarcoidosis occurred simultaneously. These findings definitely make the coincidental occurrence of these two conditions in the same patient highly unlikely.

In conclusion, granuloma annulare on palms has varied clinical presentation, and diagnosis is often missed clinically and confused with other conditions such as annular sarcoidosis as in our case. Granuloma annulare has been associated with the concomitant diagnosis of sarcoidosis in only two more case reports and this association can be evaluated further to study a common link in the etiopathogenesis of these two granulomatous skin diseases.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Cohen PR, Carlos CA. Granuloma annulare mimicking sarcoidosis: Report of patient with localized granuloma annulare whose skin lesions show 3 clinical morphologies and 2 histology patterns. J Am Dermatopathol 2015;37:547-50.
2. Brey N, Malone J, Callen JP. Acute-onset, painful acral granuloma annulare: A report of 4 cases and a discussion of the clinical and histologic spectrum of the disease. Arch Dermatol 2006;142:49-54.
3. Stewart LR, George S, Hamacher KL, Hsu S. Granuloma annulare of the palms. Dermatol Online J 2011;17:7.
4. Smith MD, Downie JB, DiCostanzo D. Granuloma annulare. Int J Dermatol 1997;36:326-33.
5. Li A, Hogan DJ, Sanusi ID, Smoller BR. Granuloma annulare and malignant neoplasms. J Am Dermatopathol 2003;25:113-6.
6. Gune P, Goktay F, Mansur AT, Koker F, Erfan G. Collagen-elastic tissue changes and vascular involvement in granuloma annulare: A review of 35 cases. J Cutan Pathol 2009;36:838-44.
7. Trotter MJ, Crawford RI, O'Connell JX, Tron VA. Mitotic granuloma annulare: A clinicopathologic study of 20 cases. J Cutan Pathol 1996;23:537-45.
8. Kato H, Fujieda Y, Kitajima Y, Yaoita H. A case of granuloma annulare and sarcoidosis- J Dermatol 1985;12:63-9.
9. Umbert P, Winkelmann RK. Granuloma annulare and sarcoidosis. Br J Dermatol 1977;97:481-6.
10. Ehrich EW, McGuire JL. Association of Granuloma Annulare with sarcoidosis. Arch Dermatol 1992;128:855-6.