

Subcutaneous Granuloma Annulare in an Atypical Age Group in Immediate Post-Covid-19 Phase

Lovleen Kaur¹, Disha Chakraborty¹, Surabhi Dayal², Sunita Singh³, Karamvir Yadav⁴

¹ Department of Dermatology, Venereology and Leprology, Pt. B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana, India

² Department of Dermatology, Venereology and Leprology, Pt. B.D. Sharma University of Health Sciences, Rohtak, Haryana, India

³ Department of Pathology, Pt. B.D. Sharma University of Health Sciences, Rohtak, Haryana, India

⁴ Department of Medicine, Pt. B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana, India

Key words: Granuloma Annulare, Covid-19, SARS-Cov-2, Palisading granuloma, Subcutaneous GA

Citation: Kaur L, Chakraborty D, Dayal S, Singh S, Yadav K. Subcutaneous Granuloma Annulare in an Atypical Age Group in Immediate Post-Covid-19 Phase. *Dermatol Pract Concept*. 2022;12(4):e2022156. DOI: <https://doi.org/10.5826/dpc.1204a156>

Accepted: January 7, 2022; **Published:** October 2022

Copyright: ©2022 Kaur et al. This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (BY-NC-4.0), <https://creativecommons.org/licenses/by-nc/4.0/>, which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.

Funding: None.

Competing interests: None.

Authorship: All authors have contributed significantly to this publication.

Corresponding author: Lovleen Kaur, MD, Senior Resident, Department of Dermatology, Venereology and Leprology, Pt. B.D. Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana, India. Email: dr.lovleen555@gmail.com

Introduction

Granuloma Annulare (GA) is a benign, self-limiting, chronic granulomatous disorder. Viruses are one of the triggering factors. Only two case reports of SARS-Cov-2 triggered GA are reported till date; one- in an adult (localized GA) and another localized, generalized and subcutaneous GA (SCGA) in pediatric patients [1,2]. SCGA is rare in adults, especially geriatric population.

Case Presentation

A 63-year-old male presented with abrupt onset, multiple, asymptomatic, skin-colored to erythematous nodules involving abdomen, bilateral upper and lower limbs for 7 days. Lesions progressed rapidly without systemic complaints except for malaise. Patient denied insect bite/ trauma before

the onset. There was no ulceration/ discharge from the nodules. Twenty days earlier, he had fever, sore-throat, malaise, body-aches and anosmia (Positive Rapid Antigen test for SARS-Cov-2). Patient received symptomatic treatment (Paracetamol and Etoricoxib) under home-isolation. SARS-Cov-2 infection was also present in wife and daughter.

Clinically, there were 23 discrete, subcutaneous nodules, firm to hard, non-tender, non-fluctuant, mobile, symmetrically distributed predominantly over extensors of bilateral thighs and few on legs, upper-arms and abdomen. Majority were appreciated on palpation only while few lesions had erythematous hue. The largest lesion measured 4 x 3 cm² over right upper thigh whereas others varied from 1 x 1 to 1.5 x 2 cm² (Figure 1). Routine biochemistry, hemogram, anti-streptolysin O titres, and Mantoux test were normal. C-reactive protein and ESR were high. SARS-Cov-2 IgG titre was 64 AU/mL(positive). Serology for HBV, HCV,

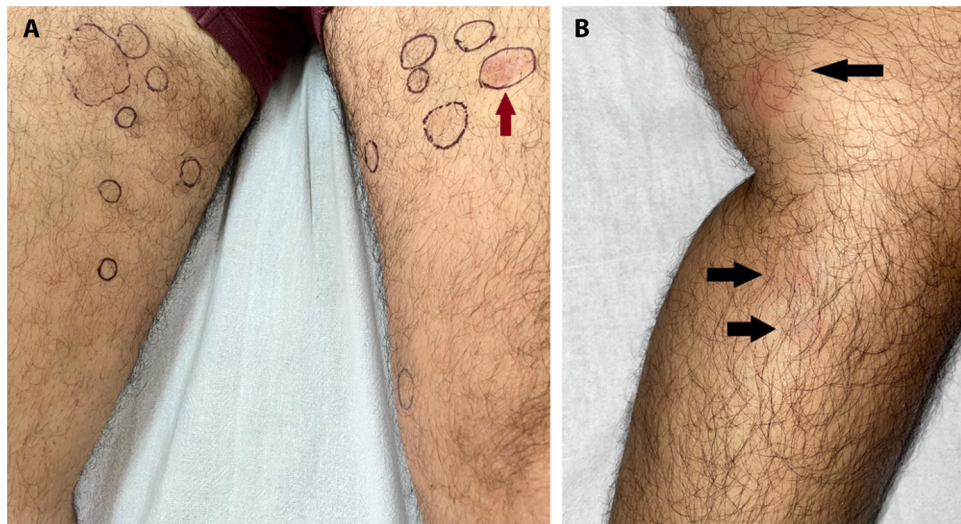


Figure 1. (A) Marked subcutaneous nodules on bilateral thighs which were better appreciated on palpation only (red arrow depicts biopsy site). (B) Faintly erythematous nodules on medial aspect of left thigh and lower leg (black arrows).

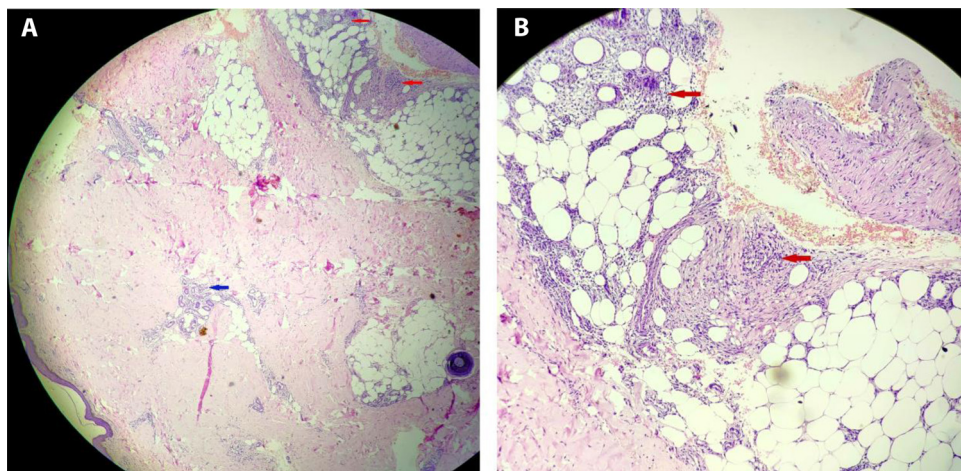


Figure 2. (A) Normal epidermis, perivascular lympho-histiocytic infiltrate in the dermis (blue arrow) and palisading of histiocytes in subcutaneous fat (red arrow) on H&E, 40x. (B) Interstitial infiltrate of lymphocytes and histiocytes with focal palisading and mucinous degeneration in subcutaneous fat marked by red arrow (H&E, 100x).

HIV, Parvovirus-B19, HSV-1 and 2, EBV, CMV, Adenovirus, Mycoplasma pneumoniae, rickettsiosis were negative. Considering the age, he was investigated for any associated malignancy. CECT-Chest revealed subtle ground glass opacities in bilateral upper lobes and fibro-atelectatic bands in apical zones suggesting post-covid sequelae. CECT-Abdomen and pelvis were normal. Deep incisional skin biopsy considering differential diagnosis of Erythema Nodosum (EN), Subcutaneous Sweet Syndrome and SCGA was performed. Histopathology was consistent with SCGA (Figure 2). Alcian Blue staining was also positive for mucin. Intralesional triamcinolone acetonide (10mg/ml) was injected in divided sittings after informed consent from the patient resulting in complete remission within fifteen days.

Conclusions

SCGA commonly affects trauma-prone sites like extensors of distal extremities. In our case it involved proximal upper and lower extremities, and abdomen. Possibility of drugs inciting SCGA is unlikely as patient had taken Paracetamol and Etoricoxib in past without any dermatological complaints. The conspicuous absence of lesional pain, tenderness, erythema and concomitant systemic features ruled out EN and Sweet syndrome. Absence of vasculitis on histopathology eliminates causes of 'septal panniculitis with vasculitis'. Histopathologically, positive Alcian blue stain for mucin excludes differential of Miescher Radial Granuloma of EN. Although, rheumatoid nodules are also asymptomatic and

simulates SCGA on histopathology, the former has more fibrin deposition than mucin causing 'red' granulomas unlike 'blue' granulomas in SCGA.

SARS-Cov-2 induces cytokine storm, producing IL-1 β , IL-6, TNF- α , IL-12/23 which may precipitate SCGA as a reactive phenomenon. Vascular damage associated with viruses causing immune-complex deposition may also explain chronic granulomatous changes seen in GA. To conclude, geriatric SCGA may be another dermatological manifestation triggered by SARS-Cov-2. It may enforce a huge diagnostic dilemma in the elderly confusing it with cutaneous metastasis necessitating meticulous diagnostic workup.

References

1. García-Gil MF, Monte Serrano J, García García M, Matovelle Ochoa C, Ara-Martín M. Granuloma annulare triggered by SARS-CoV-2 infection. The first reported case. *J Dermatol*. 2021;48(1):e1-e2. DOI:10.1111/1346-8138.15594. PMID: 33169426.
2. Mazzotta F, Troccoli T, Bonifazi E. Granuloma annulare and SARS-CoV-2 pandemic. *Eur J Pediatr Dermatol*. 2020;30(2):83-87. DOI: 10.26326/2281-9649.30.2.2105.