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Case Report

Granulomatous rosacea: a rare atypical variant

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ABSTRACT

Rosacea is a chronic inflammatory dermatosis mainly affecting the cheeks, nose, chin, and forehead. It is characterized by recurrent episodes of flushing, persistent erythema, phymatous changes, papules, pustules, and telangiectasia. Granulomatous rosacea (GR) is an uncommon variant of rosacea characterized by persistent erythema and papules usually seen in middle age women. Histopathology of GR shows granulomas in upper dermis and has a delayed therapeutic response compared to other types of rosacea. We report an atypical case of GR in a 19-year-old male. A 19-year-old male who presented with reddish dry raised lesions around mouth and nose of 3 months duration. On clinical examination diffuse shiny infiltrated plaques with ill-defined margins were seen over perioral region extending to nasolabial folds, lower forehead including glabellar region. Differential diagnosis of Granulomatous rosacea, Seborrheic dermatitis, Follicular mucinosis, Plaque sarcoidosis was considered. Histopathology showed normal epidermis, interstitial granulomatous infiltrate composed of epithelioid histiocytes, langhans giant cells, lymphocytes suggestive of GR. Patient was treated with oral minocycline 65 mg/day, broad spectrum sunscreen lotion, topical clindamycin gel daily night along with topical ivermectin once weekly resulting in marked clinical improvement after 8 weeks. Classical presentation of GR shows yellowish brown, red papules over cheeks, periorificial regions healing with scar formation. The present case had atypical clinical features presenting with infiltrated and well marginated plaques over multiple facial regions which was confirmed by histopathology and responded satisfactorily to the treatment.

Keywords: Chronic inflammatory dermatosis, Granulomatous rosacea, Granulomatous inflammation

INTRODUCTION

Rosacea is a chronic inflammatory skin condition that most commonly involves the central face, including the cheeks, forehead, nose, and chin. It often presents with repeated episodes of facial flushing and can progress to persistent redness, papules, pustules, visible superficial vessels, and phymatous alterations.

Granulomatous rosacea (GR) represents a less frequent subtype characterized by granulomatous inflammation and accounts for nearly 1-2% of reported rosacea cases. It is usually seen among middle-aged or older individuals.[1]

Clinically, GR may appear as firm pink, red-brown, or yellow-brown papules, plaques, or nodules affecting the cheeks, forehead, perioral skin, or around the eyes.[2]

Severe or untreated forms may extend beyond the midface and occasionally result in disfiguring scarring.[3,4] Here, we describe a case of granulomatous rosacea in a 19-year-old male, in whom the definitive diagnosis was made after correlating clinical impressions with histopathological findings.

The patient showed a favorable therapeutic response to treatment with oral minocycline, topical clindamycin gel,

and topical ivermectin, with notable clinical improvement during follow-up.

CASE REPORT

A 19-year-old male presented with reddish dry raised lesions around mouth and nose of 3 months duration. Initially, the patient developed a few skin- colored papules over the right nasal crease. Later he developed similar lesions over nasolabial folds on both sides which extended over few days to involve entire chin region. Scaling, redness and infiltrated appearance was seen over affected areas. The lesions were associated with mild pruritus and burning sensation. There was no history of topical corticosteroid cream application, excessive sun exposure, previous history of rosacea, stress and alcohol consumption. Past history and family history were not contributed. Patient is student by occupation, takes mixed diet and has no addictions or previous drug history.

On clinical examination, diffuse shiny infiltrated plaques with ill-defined margins were seen over perioral region extending to nasolabial folds, nasal creases and the entire chin region (Figure 1 and 2). Similar lesions were also seen over lower forehead including glabellar region (Figure 3). A few discrete papules were seen in the adjoining skin at places around nose. Differential diagnosis of granulomatous rosacea, seborrheic dermatitis, follicular mucinosis, plaque sarcoidosis were considered. Complete hemogram, serum biochemistry, viral markers and imaging studies including chest X-ray, ultrasound abdomen were normal. Histopathology showed orthokeratosis, preserved granular layer, mild acanthosis and intact basal layer in the epidermis along with interstitial granulomatous infiltrate composed of epithelioid histiocytes, langhans giant cells and few lymphocytes in the superficial and deep dermis suggestive of GR (Figure 4). Based on the above clinical picture, laboratory findings and histopathology the case was diagnosed as GR.

Figure 1: Erythematous scaly infiltrated plaques with ill-defined margins over perioral area (right side).

Figure 2: Diffuse shiny infiltrated plaques over chin, nasolabial folds (left side).

Figure 3: Diffuse shiny infiltrated plaques over forehead.

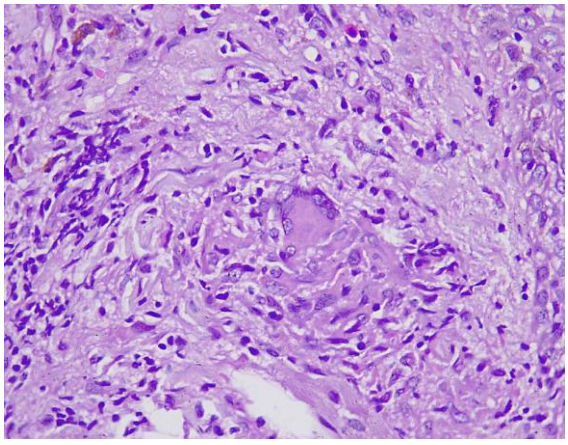

Figure 4: Granuloma with epitheloid histiocytes and Langhan's type giant cell.

Patient was treated with oral minocycline extended-release tablets 65 mg/day, broad spectrum sunscreen lotion daily, topical clindamycin gel applied daily night over affected areas only. He was also advised to apply topical ivermectin cream once weekly all over the face. Marked clinical improvement with resolution of infiltrated plaques, redness and scaling was seen after 8 weeks of treatment (Figure 5). Patient is under review.

Figure 5 (a-c): Post-treatment-marked clinical improvement seen after 8 weeks.

DISCUSSION

Rosacea is a chronic inflammatory disorder of the skin primarily involving the central face. The term originates from the Greek word meaning 'rose-like', reflecting its hallmark feature of recurrent flushing, which may occur alone or accompany persistent or intermittent erythema.[5] A recent meta-analysis estimated the overall prevalence of rosacea in adults to be approximately 5.46% worldwide.[6] Although rosacea can affect both sexes, women tend to be diagnosed more frequently, whereas men are more likely to develop severe manifestations, particularly phymatous changes.[1]

The condition is most commonly identified after the third decade of life and is more readily recognized in fair-skinned individuals (Fitzpatrick skin types I-III). However, rosacea is also seen in darker skin phototypes, where clinical signs such as erythema or telangiectasia may be less obvious, leading to potential underdiagnosis.[6]

The pathogenesis of rosacea is multifactorial and involves a complex interplay between dysregulated innate and adaptive immune responses, inflammasome activation, and neurovascular dysregulation. Various environmental and lifestyle factors are known to precipitate or aggravate disease activity, including ultraviolet exposure, high temperatures, emotional stress, spicy or hot foods and beverages, alcohol intake, vigorous exercise, cosmetic irritants, and inappropriate or prolonged use of topical corticosteroids on the face.[7,8]

Clinically, rosacea is categorized into distinct subtypes based on predominant features: erythematotelangiectatic, papulopustular, phymatous, and ocular variants. GR has historically been labeled as a clinical subtype; however, its classification remains a topic of debate following its omission from the most recent National Rosacea Society guidelines.[9] GR represents an uncommon form of the disease and is characterized by firm, monomorphic yellow-brown or red-brown papules or nodules predominantly affecting the facial region-including the perioral area, eyelids, cheeks, and nasal region- and less frequently the ears, axillae, groin, trunk, or extremities.[8] Features classically associated with rosacea, such as flushing or telangiectasias, may be minimal or absent in GR, and triggers tend to parallel those seen in common rosacea subtypes.

In our case, the patient presented with unusually large, infiltrated erythematous plaques with surface scaling distributed over the perinasal and perioral areas- findings that are infrequently reported in GR. Histopathological analysis is vital in establishing the diagnosis and differentiating GR from clinicopathological mimickers such as cutaneous sarcoidosis or lupus miliaris disseminatus faciei (LMDF). The biopsy in this case revealed interstitial granulomatous inflammation composed of epithelioid histiocytes, Langhans-type giant cells, and lymphocytes beneath an unremarkable epidermis, consistent with GR. The absence of naked granulomas helped exclude sarcoidosis, while the lack of caseating necrosis argued against LMDF.

GR typically follows a slowly progressive course and may demonstrate suboptimal response to standard rosacea therapies, making management challenging. Treatment evidence remains limited to case reports and small series, with therapeutic options including topical corticosteroids, calcineurin inhibitors, oral tetracyclines, isotretinoin, and laser therapies.[10]

In our patient, a regimen comprising oral minocycline 65 mg/day, daily broad-spectrum photoprotection, topical clindamycin gel, and topical ivermectin resulted in marked clinical improvement, with near-complete resolution noted after eight weeks. Regular follow-up remains essential, as treatment resistance and relapse are not uncommon, emphasizing the need for improved therapeutic strategies for this difficult-to-treat rosacea variant.

CONCLUSION

GR remains a distinct but elusive variant of rosacea, demanding a high index of suspicion especially when patients present with persistent monomorphic papules or nodules unresponsive to conventional therapy. The present case had atypical clinical features presenting with infiltrated and well marginated plaques over multiple facial regions which was confirmed by histopathology and responded satisfactorily to the treatment. By reporting well-characterized cases, emphasizing clinicopathologic correlation, and exploring innovative therapies, we can gradually improve recognition, personalize management, and ultimately achieve better outcomes for patients with this challenging subtype of rosacea.

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