

Case Series

Lupus Miliaris Disseminatus Faciei: A Venture into the Uncommon-Four Cases of Acne Mimicking Facial Dermatopathy – A Case Series

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ABSTRACT

Lupus miliaris disseminatus faciei (LMDF) is a rare chronic granulomatous skin disorder primarily affecting the face, often misdiagnosed due to its resemblance to acne, rosacea or other granulomatous diseases. It predominantly presents as erythematous papules or nodules, commonly involving the periorbital region, nasolabial folds, lower jaw, forehead and cheeks. LMDF follows a persistent course with episodic flare-ups, frequently resulting in atrophic scarring. The pathogenesis likely involves a dysregulated immune response to pilosebaceous materials, with a possible hypersensitivity reaction to *Mycobacterium tuberculosis*. Histopathology varies by stage, showing epithelioid granulomas with or without necrosis. Dermoscopy reveals characteristic orange-yellow backgrounds with follicular plugging. Treatment remains challenging, involving corticosteroids, isotretinoin, antibiotics, immunosuppressants and laser therapy. Early intervention is crucial to prevent chronicity and scarring. Here, we discuss four cases evaluated in our dermatology outpatient department, highlighting clinical features, diagnostic challenges and therapeutic outcomes.

Keywords: Acne mimickers, Chronic granulomatous facial condition, Facial scarring, Lupus miliaris disseminatus faciei

INTRODUCTION

Lupus miliaris disseminatus faciei (LMDF) is a rare idiopathic granulomatous skin disease, primarily affecting the eyelids and facial skin in young adults. It presents as multiple firm papules and is often misdiagnosed as acne.^[1] Early diagnosis and treatment are crucial to prevent progression and scarring.^[2,3] Here, we report four cases that presented to our dermatology outpatient department.

CASE SERIES

Case 1

A 26-year-old male presented with multiple red papules on the face of 4 months, associated with mild itching and burning. Initially appearing near the right eye, the lesions spread to the cheeks, nose, chin and right ear, with occasional pus discharge. There was no history of fever, weight loss, redness or burning of face on exposure to sunlight, eating hot or spicy foods or in exposure to hot climate. Dermatological examination showed multiple, discrete, well-defined, grouped, erythematous to violaceous papules and nodules, predominantly on the right side of the face.

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Routine blood tests, chest X-ray, Ultrasound abdomen and Mantoux were normal. Skin biopsy revealed large multiple, confluent, ill formed epithelioid granulomas, surrounded with lymphocytic cuffing, some showing central caseous necrosis, within dermis extending into subcutis. Few Langhans giant cells and neutrophils also noted, indicating LMDF. He was started on Capsule Isotretinoin 20 mg once a day (OD), showing clinical improvement over 3 months with gradual resolution of existing lesions and no new lesions.

Case 2

A 20-year-old male presented with multiple red papules on the face for 4 months, associated with mild pain and itching, beginning initially on the cheeks and spread to the nose, forehead and ears within days. There was no other positive history. On examination, multiple well-defined erythematous papules, few with central atrophic changes involving forehead, both cheeks, ears and chin were present. Skin biopsy showed giant cells with mixed dense inflammatory infiltrates within dermis. Areas of necrosis and granuloma formation noted, reaching up to subcutaneous tissue. Blood parameters were normal, interferon-gamma release assay negative. He was diagnosed as a case of LMDF and started on isotretinoin 20 mg OD and noticed resolution of lesions with residual hypopigmentation over 4 months.

Case 3

A 26-year-old male presented with asymptomatic red papules on the face for 3 months, initially around the right eye, later involving the left. There was no other positive history. Examination showed multiple, well-defined, normopigmented to erythematous papules around both eyes. Investigations were normal. Skin biopsy revealed dermal granulomas with central caseation and lymphocyte cuffing, confirming LMDF. He was started on isotretinoin 20 mg OD, showing clinical improvement over 3 months.

Case 4

A 36-year-old female presented with painful red papules and nodules on both cheeks for 2 weeks, with minimal itching and scarring. Examination revealed erythematous papules, nodules, pustules, post-inflammatory pigmentation and pitted scars on the zygomatic and maxillary regions. Skin biopsy showed ill-defined granulomas around adnexal structures, dermal abscess with neutrophils, lymphocytes and histiocytes, suggesting LMDF. She was started on isotretinoin 20 mg OD, showing clinical improvement over 3 months.

DISCUSSION

LMDF is a rare, chronic granulomatous skin condition affecting the face.^[4,5] It presents as discrete erythematous

papules or nodules, primarily on the cheeks, periorbital areas, forehead and sometimes extending to the chin or neck.^[2,3] Despite its name, LMDF is not related to lupus vulgaris or tuberculosis.^[1,4] The lesions are typically non-suppurative but may be tender. Unlike acne or rosacea, LMDF follows a persistent course with episodic flare-ups and often leads to pitted scarring and post-inflammatory pigmentation.^[5,6] It predominantly affects young adults, with monomorphic, clustered lesions that can result in misdiagnosis.^[7]

A comparison of two major studies on LMDF – one by Wang *et al.*^[8] in 2024 and another by Amiruddin *et al.*^[4] in 2011 – shows a mean age of 38.3 ± 12.1 years (range: 8–70) and 34.5 ± 14.9 years (range: 8–68), respectively. In contrast, our study found a mean age of 27 ± 6.6 years (range: 20–36). More females were affected in the previous studies (59.63% and 60%), whereas only 25% of our cases were female. Eyelid involvement was observed in 100% of cases in the first study, with 107 out of 109 showing bilateral involvement, and in 91% of cases in the second study. In our study, two out of four patients had bilateral eyelid involvement. The disease duration in the prior studies ranged from 1 to 120 months (average: 14.8 ± 30.9 months) and 18 months, whereas in our cases, it was significantly shorter, at 2.9 ± 1.6 months. Although generally asymptomatic, mild itching was reported in 29.55% of cases in past studies and in three out of four cases in our study. Healing often resulted in atrophic scars, affecting 88.63% of patients, which was also observed in two out of four of our cases [Figure 1].

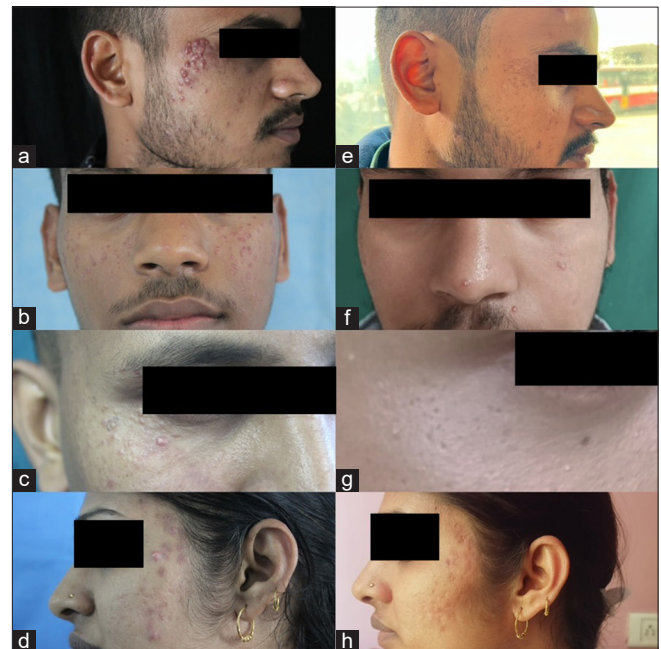


Figure 1: (a-d) Shows clinical images of the four patients at presentation. (e-h) Shows clinical images of the patients after treatment with Capsule Isotretinoin.

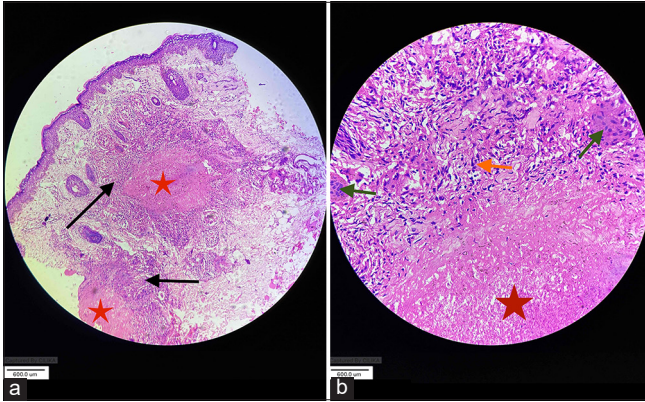


Figure 2: (a) Epidermis appears normal. Dermis shows large multiple epithelioid granulomas (black arrows), few with central caseous necrosis (red stars) ($\times 10$) and (b) dermal granuloma showing caseation (red star) and giant cells (green arrows) along with inflammatory infiltrates (orange arrow) ($\times 40$).

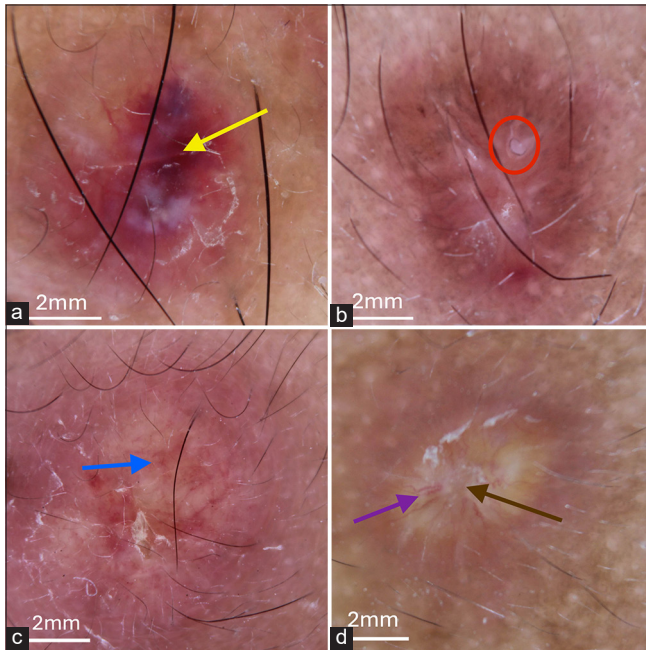


Figure 3: Dermoscopy showing (a) Reddish, orangish to yellowish structureless background (yellow arrow) ($10\times$), (b) Follicular plugging (orange circle) ($10\times$), (c) Arborising vessels (blue arrow) ($10\times$), (d) White streaks/scar-like areas (brown arrow) associated with hairpin vessels (purple arrow) ($10\times$).

The exact cause of LMDF remains unclear but is believed to involve a dysregulated T-cell-mediated immune response to foreign materials such as sebum and keratin within pilosebaceous units, leading to granulomatous inflammation.^[3,5] Some cases have shown a response to antituberculosis treatment, suggesting a possible *Mycobacterium tuberculosis* hypersensitivity reaction, though this is not universally observed.^[4,8]

Histopathological findings vary depending on the stage of the disease. Early lesions exhibit a lymphohistiocytic infiltrate around vessels and adnexal structures. Classic lesions often present with epithelioid cell granulomas, with or without central caseation, which was seen in all four of our cases.^[4,8,9] Abscess formation was noted in one of our cases. Late-stage lesions typically show perifollicular fibrosis and nonspecific inflammatory infiltrate [Figure 2].^[9]

LMDF can be distinguished from other conditions such as acne vulgaris (which presents with comedones), rosacea (characterised by erythema, telangiectasia and flushing), lupus vulgaris (which involves caseating granulomas and ulceration) and papular sarcoidosis (which presents as yellow-brown or violaceous plaques).^[5,9] The hallmark histopathological feature of LMDF is the presence of dermal epithelioid granulomas with caseous necrosis.^[8,9]

Dermoscopy findings consistently reveal an orange-yellow structureless background with follicular plugging, a feature considered specific to LMDF. In addition, white streaks, scar-like areas, arborising vessels and hairpin vessels are frequently observed [Figure 3].^[10]

The treatment of LMDF aims to reduce inflammation and prevent scarring. Various therapies, including topical and oral corticosteroids, antituberculosis treatment, oral retinoids, apremilast, tetracyclines, immunosuppressants such as methotrexate and cyclosporine, biologics and combination therapies, have been used with variable success.^[3,5,6,8,9] Intralesional and intramuscular corticosteroids have also been attempted.^[11] Laser therapies, including carbon dioxide laser, neodymium-doped yttrium aluminium garnet and pulsed dye laser, have been explored for scar treatment.^[12]

In the second study, different treatment responses were reported: 45.45% of patients responded to minocycline, 66.67% to doxycycline, 28.57% to rifampicin, 80% to roxithromycin and 66.67% to tranilast. In our study, all four patients were treated with isotretinoin.

CONCLUSION

LMDF is a chronic granulomatous disorder with challenging treatment. We present four cases successfully treated with low-dose isotretinoin, showing clinical improvement within 4 months. Oral isotretinoin is a good option for treatment of LMDF with fast clinical response and should be initiated as soon as possible in hopes of preventing chronicity and scarring.

Ethical approval: Institutional Review Board approval is not required.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the

patients have given their consent for 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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