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Case Report

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# MICROPAPULAR CUTANEOUS SARCOIDOSIS: CLINICODERMOSCOPIC AND HISTOPATHOLOGICAL CORRELATION

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**ABSTRACT**

Sarcoidosis is a multisystem inflammatory disease characterized by noncaseating granulomas, with cutaneous involvement presenting in various morphological patterns. Micropapular cutaneous sarcoidosis is a rare clinical variant that may pose a diagnostic challenge. We report a 64-year-old woman presenting with numerous yellowish-pink millimetric papules on the posterior trunk. Dermoscopy revealed multiple yellow-orange structureless areas on a pink background, while histopathological examination demonstrated non-necrotizing "naked" granulomas with multinucleated giant cells. Systemic evaluation revealed lymphopenia, elevated serum angiotensin-converting enzyme levels, hypercalciuria, and thoracic imaging abnormalities consistent with systemic involvement. Treatment with oral methylprednisolone and methotrexate resulted in complete clinical resolution of the cutaneous lesions within three months. This case emphasizes the value of clinicodermoscopic and histopathological correlation in recognizing this rare presentation and prompting evaluation for systemic disease.

**KEYWORDS:** Cutaneous sarcoidosis; dermoscopy; methotrexate; micropapular sarcoidosis; sarcoidosis.

## INTRODUCTION

Sarcoidosis is a multisystem inflammatory disease of unknown etiology characterized by the formation of noncaseating granulomas. Cutaneous involvement occurs in approximately 20–35% of cases and may present with various clinical manifestations, including papules, plaques, nodules, scar sarcoidosis, and lupus pernio. Micropapular cutaneous sarcoidosis is a rare clinical variant of cutaneous sarcoidosis characterized by numerous yellowish-red or brownish millimetric papules, most commonly involving the trunk and extremities.[1] Dermoscopic examination may reveal yellow-orange structureless areas and linear or branching vessels. Histopathologically, non-necrotizing dermal granulomas composed of epithelioid histiocytes, often accompanied by multinucleated giant cells, are characteristic. Diagnosis relies on the integration of clinical and histopathological findings with systemic evaluation.[2,3] We present this case to highlight the clinical, dermoscopic, and histopathological features of the rare micropapular variant of cutaneous sarcoidosis, along with associated findings of systemic involvement.

## CASE REPORT

A 64-year-old woman presented to our dermatology outpatient clinic with a three-month history of intermittently pruritic skin lesions that had progressively increased in number. Her medical history was unremarkable, with no known systemic disease. Dermatological examination revealed numerous yellowish-pink, millimetric papules with a tendency to cluster and coalesce on the posterior trunk (Fig. 1). Dermoscopic examination revealed yellow-orange structureless areas within the lesions (Fig. 2). Histopathological examination of a skin biopsy demonstrated well-circumscribed, non-necrotizing epithelioid granulomas in the superficial and mid dermis. The granulomas were surrounded by sparse lymphocytic inflammation and contained multinucleated giant cells (Fig. 3A–B). Based on the clinical, dermoscopic, and histopathological findings, a diagnosis of micropapular cutaneous sarcoidosis was established. Further evaluation for systemic involvement revealed an absolute lymphocyte count of $0.73 \times 10^9$/L (reference range, 1.0–4.8 × $10^9$/L), a serum angiotensin-converting enzyme

level of 66.4 U/L (reference range, 8–52 U/L), and 24-hour urinary calcium excretion of 541.37 mg/day (reference range, 100–300 mg/day). Non-contrast chest computed tomography demonstrated an increased number of millimetric lymph nodes in the mediastinal stations. In addition, focal calcified thickening of the anterior costal pleura and irregular thickening of the posterior costal pleura were observed bilaterally. The patient was evaluated by the Department of Pulmonology, and the overall clinical, laboratory, and radiological findings were considered consistent with systemic involvement. Given the presence of systemic involvement, oral methylprednisolone at a dose of 64 mg/day and methotrexate at a dose of 10 mg/week were initiated concurrently. The methylprednisolone dose was gradually tapered at one-week intervals to 48, 32, 24, 16, and 8 mg/day and subsequently discontinued. Complete clinical resolution of the cutaneous lesions was achieved by the third month of treatment (Fig. 4). Maintenance therapy with methotrexate 10 mg/week is ongoing.

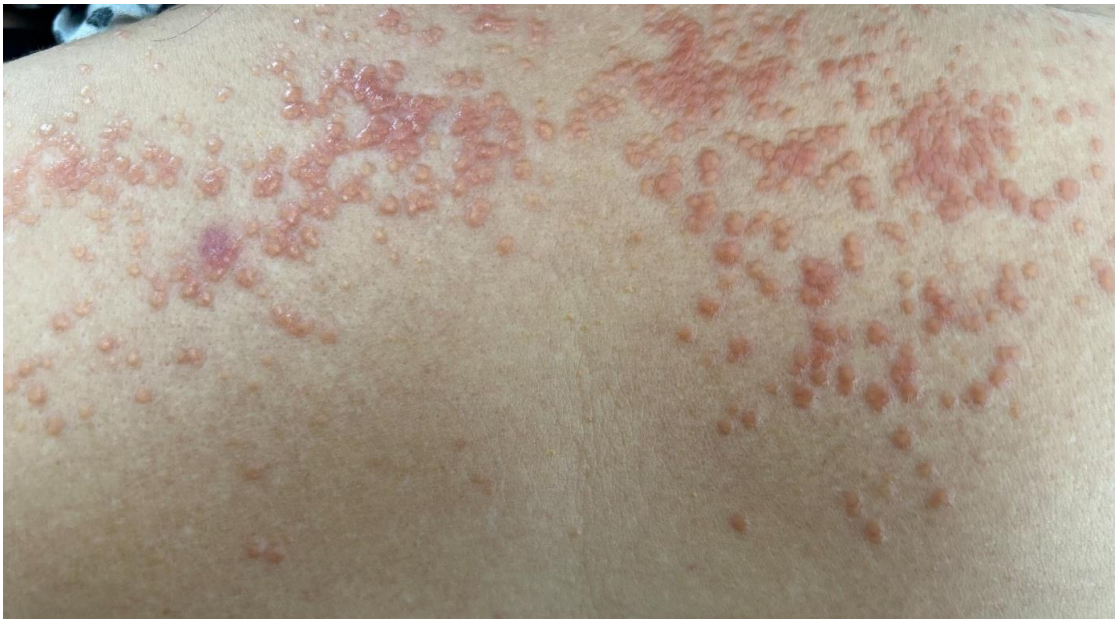

**Fig. 1. Clinical appearance of numerous yellowish-pink millimetric papules with a tendency to cluster and coalesce on the back.**

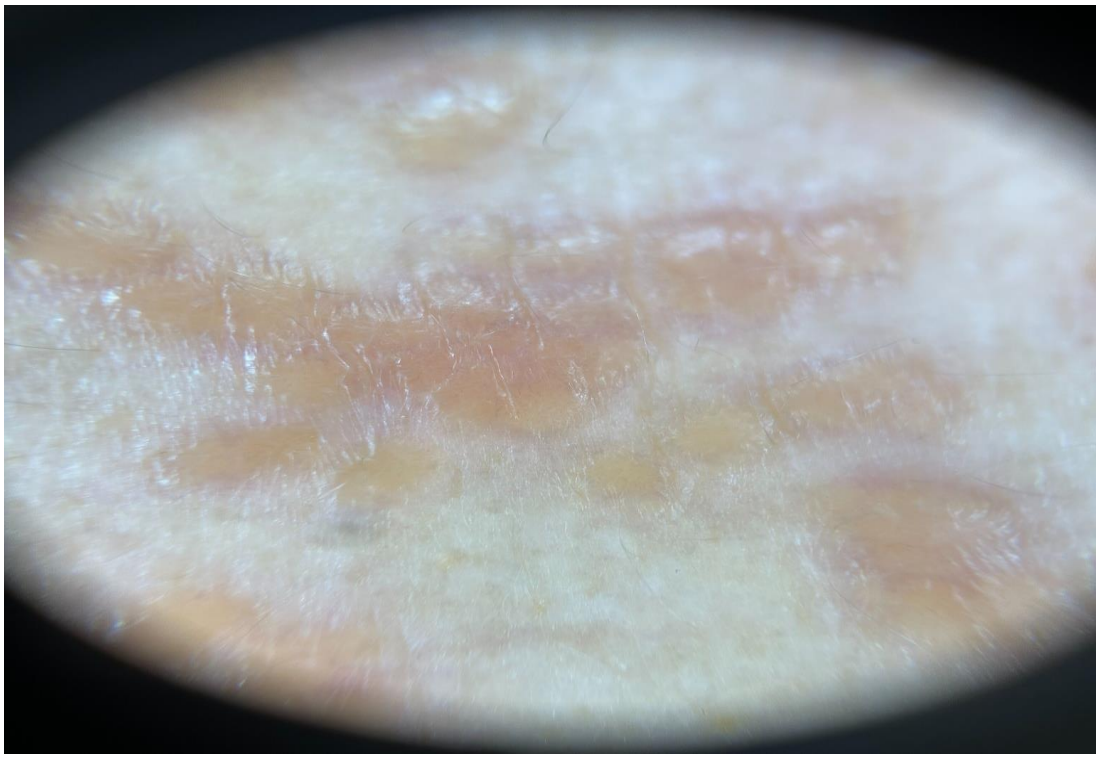

**Fig. 2. Dermoscopic examination showing multiple yellow-orange structureless areas on a pink background.**

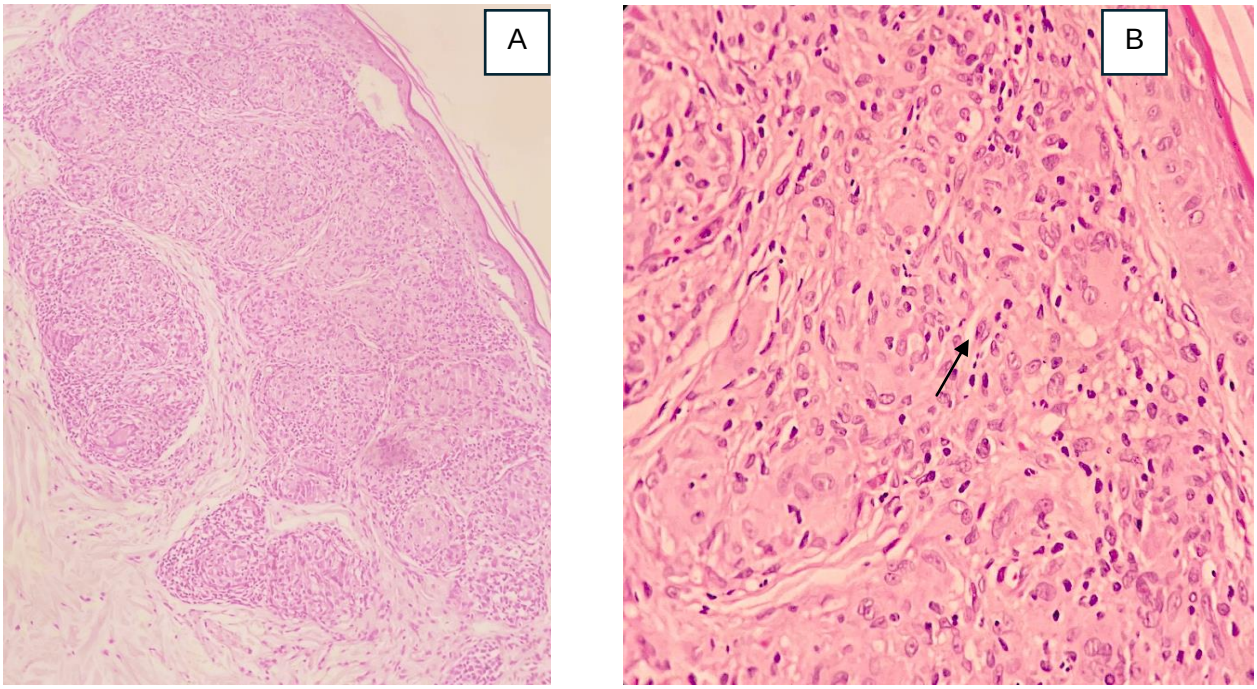


**Fig. 3A–B. (A) Multiple well-circumscribed, non-necrotizing "naked" granulomas in the dermis with minimal surrounding lymphocytic inflammation (H&E, ×100). (B) Epithelioid histiocytes and multinucleated giant cells (arrow) within the granulomas (H&E, ×400).**

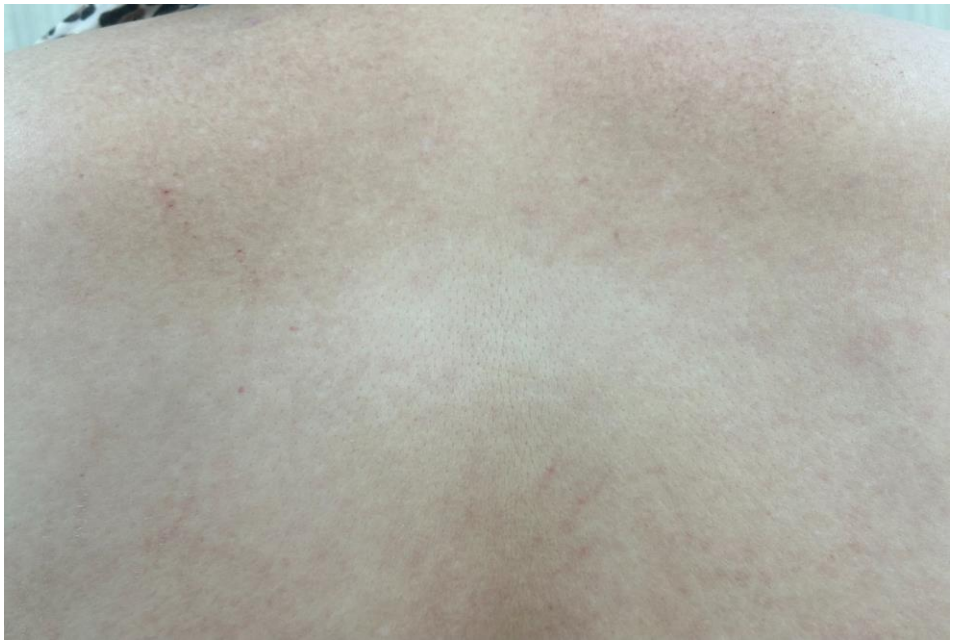

**Fig. 4. Complete clinical resolution of the cutaneous lesions after three months of treatment.**

## DISCUSSION

Micropapular cutaneous sarcoidosis is a rare and infrequently reported clinical variant of cutaneous sarcoidosis. A 2018 literature review identified only 18 patients across 12 reports. Clinically, it typically presents with numerous small, relatively monomorphic papules that may appear faintly erythematous or yellowish-brown and may occasionally be pruritic. Because of its subtle morphology and potential to mimic other papular dermatoses, the differential diagnosis includes micropapular disorders such as lichen nitidus and lichen scrofulosorum, as well as granulomatous diseases including granuloma annulare and cutaneous tuberculosis.[4] In our patient, the presence of numerous yellowish-pink, millimetric papules with a tendency to cluster and coalesce was consistent with the micropapular variant.

Dermoscopy may provide useful clues for the recognition of cutaneous sarcoidosis. Yellow-orange globules or structureless areas are among the most characteristic dermoscopic findings and are thought to

correspond to granulomatous inflammation within the dermis. In a cross-sectional study of 39 patients with cutaneous sarcoidosis, grouped translucent orange globular structures were observed in all cases, whereas linear vessels were identified in 38 patients.[5] However, these findings are not specific to sarcoidosis and should therefore be interpreted in conjunction with the clinical and histopathological features. In our patient, multiple yellow-orange structureless areas on a pink background correlated with the dermal granulomatous inflammation observed histopathologically.

Histopathologically, cutaneous sarcoidosis is typically characterized by well-formed, non-necrotizing epithelioid granulomas with minimal surrounding lymphocytic inflammation, resulting in the characteristic "naked granuloma" appearance. However, this histopathological pattern is not pathognomonic, and clinicopathological correlation together with the exclusion of infectious and other granulomatous disorders remains essential for diagnosis.[6] In our patient, non-necrotizing epithelioid granulomas with minimal surrounding lymphocytic inflammation and multinucleated giant cells in the superficial and mid dermis supported the diagnosis of cutaneous sarcoidosis.

Cutaneous manifestations may precede systemic sarcoidosis or represent the initial clinical manifestation of the disease. Therefore, patients diagnosed with cutaneous sarcoidosis should be evaluated for extracutaneous involvement.[7] In our patient, systemic evaluation revealed lymphopenia, an elevated serum angiotensin-converting enzyme level, and marked hypercalciuria. Chest computed tomography demonstrated mediastinal lymph nodes and pleural abnormalities, and subsequent pulmonology evaluation considered the overall clinical, laboratory, and radiological findings consistent with systemic involvement. This finding underscores the importance of recognizing cutaneous sarcoidosis, particularly when it presents with an unusual morphology, as the dermatological diagnosis may lead to the detection of otherwise unrecognized systemic disease.

Treatment of cutaneous sarcoidosis depends on the extent and severity of the cutaneous disease and the presence of extracutaneous involvement. Topical or intralesional corticosteroids may be used for localized disease, whereas systemic therapy may be required for extensive cutaneous disease or systemic involvement. Systemic corticosteroids are commonly used in this setting, while methotrexate may serve as a steroid-sparing agent in patients requiring prolonged systemic therapy.[8] In our patient, oral methylprednisolone and low-dose methotrexate (10 mg/week) were initiated concurrently because of systemic involvement. Methylprednisolone was gradually tapered and discontinued, and complete clinical resolution of the cutaneous lesions was achieved by the third month of treatment, with methotrexate continued as maintenance therapy.

## CONCLUSION

Micropapular cutaneous sarcoidosis is a rare clinical variant that may pose a diagnostic challenge because of its subtle and nonspecific morphology. Recognition of its characteristic clinicodermoscopic and histopathological features is important not only for establishing the diagnosis but also for prompting appropriate evaluation for potentially associated systemic involvement.

## INFORMED CONSENT

Written informed consent was obtained from the patient for publication of this case and accompanying images.

## ACKNOWLEDGEMENTS

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## CONFLICT OF INTEREST

The author declares no conflict of interest.

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