

Annular Cutaneous Sarcoidosis with Systemic Involvement: A Dermatopathological Case Report and Review of the Literature

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Abstract

Case Report

Background: Cutaneous sarcoidosis is a frequent manifestation of systemic sarcoidosis and exhibits a wide spectrum of clinical and histopathological presentations. Annular sarcoidosis is a rare variant that may mimic other granulomatous dermatoses, making diagnosis challenging. Dermatopathological examination remains the cornerstone for definitive diagnosis. **Case presentation:** We report the case of a 62-year-old woman presenting with chronic pruritic annular facial lesions associated with exertional dyspnea. Clinical, dermoscopic, radiological, and histopathological findings confirmed the diagnosis of annular cutaneous sarcoidosis with pulmonary involvement. **Conclusion:** This case highlights the diagnostic value of dermatopathology in annular sarcoidosis and emphasizes the role of cutaneous manifestations as a marker of systemic disease.

Keywords: Cutaneous sarcoidosis; annular sarcoidosis; dermatopathology; granulomatous dermatitis; dermoscopy; systemic involvement.

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INTRODUCTION

Sarcoidosis is a chronic multisystem inflammatory disease characterized by the presence of non-caseating epithelioid granulomas in affected organs. The etiology remains unknown, although immune dysregulation triggered by environmental and genetic factors has been implicated. Cutaneous involvement occurs in approximately 20–30% of patients and may be the initial manifestation of systemic disease.

Cutaneous sarcoidosis is known for its polymorphic clinical presentation and has been described as a “great imitator.” Annular sarcoidosis is a rare morphological variant, accounting for approximately 5–10% of cutaneous sarcoidosis cases. Its clinical resemblance to other annular dermatoses often leads to diagnostic delay. Histopathological examination is essential to confirm the diagnosis and exclude other granulomatous conditions.

We present a dermatopathological case of annular cutaneous sarcoidosis with pulmonary involvement and discuss its clinical, dermoscopic, and histopathological features.

CASE PRESENTATION

A 62-year-old woman presented to the dermatology department with an eight-year history of pruritic facial lesions progressively spreading from the right cheek to the entire face and scalp. She also reported progressive dyspnea on exertion.

Clinical Findings

Dermatological examination revealed multiple erythematous plaques with annular and coin-shaped morphology distributed over the forehead, cheeks, chin, and scalp. The lesions ranged in size from 1 × 1 cm to 5 × 8 cm and exhibited slight scaling. No mucosal involvement was observed.

Dermoscopic Findings

Dermoscopy showed structureless yellow-orange areas, linear and branching vessels, and a translucent background, suggestive of granulomatous infiltration. These findings were consistent with previously reported dermoscopic patterns of cutaneous sarcoidosis.

Radiological Findings

Chest computed tomography revealed bilateral hilar and mediastinal lymphadenopathy associated with

multiple bilateral pulmonary nodules, suggestive of systemic sarcoidosis.

Histopathological Findings

Skin biopsy demonstrated well-formed, non-caseating epithelioid granulomas located in the dermis, composed of epithelioid histiocytes and multinucleated giant cells, with sparse lymphocytic infiltrate (“naked granulomas”). No caseous necrosis was observed.

Special stains (Ziehl–Neelsen, PAS, Grocott) were negative for infectious agents. These findings confirmed the diagnosis of cutaneous sarcoidosis.

DISCUSSION

Dermatopathological Aspects

Histopathologically, cutaneous sarcoidosis is characterized by compact, well-formed non-caseating granulomas composed of epithelioid histiocytes and multinucleated giant cells with minimal peripheral lymphocytic infiltrate. Asteroid bodies and Schaumann bodies may be observed within giant cells.

Annular morphology may result from centrifugal expansion of granulomatous infiltrates with central regression. Dermatopathological examination is crucial to differentiate sarcoidosis from other granulomatous dermatoses.

Differential Diagnosis

The main dermatopathological differential diagnoses include:

- Tuberculoid leprosy
- Cutaneous tuberculosis
- Granuloma annulare
- Necrobiosis lipoidica
- Foreign body granuloma
- Deep fungal infections

Clinicopathological Correlation

Cutaneous sarcoidosis often reflects systemic involvement, particularly pulmonary disease. Facial localization is frequently associated with chronic sarcoidosis. Dermoscopy serves as a useful non-invasive tool to guide biopsy and support clinical suspicion.

Prognostic and Therapeutic Implications

Cutaneous involvement may serve as an indicator of systemic disease severity. Early diagnosis allows prompt systemic evaluation and appropriate management. Treatment options include topical or

intralesional corticosteroids, systemic corticosteroids, antimalarials, methotrexate, and biologic agents.

CONCLUSION

Annular cutaneous sarcoidosis is a rare dermatological entity with distinctive dermatopathological features. Histopathological examination remains the gold standard for diagnosis. This case underscores the importance of clinicopathological correlation in identifying systemic sarcoidosis and guiding patient management.

Ethics Statement

Informed consent was obtained from the patient for publication of this case report.

Conflict of Interest

The authors declare no conflicts of interest.

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