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**Extensive patch type granulomas annulare: A rare case report**

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**CASE REPORT**

**ABSTRACT**

A 16-year-old girl presented with multiple, asymptomatic, progressive, hyperpigmented patches of 6 months duration over trunk and thighs. Histopathology showed features of interstitial granuloma annulare. The clinical diagnosis was consistent with patch type granuloma annulare.

**Key Words**

Granuloma annulare, patch type granuloma annulare, interstitial pattern, palisading granuloma, necrobiosis

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**INTRODUCTION**

Granuloma annulare (GA) is a benign cutaneous disease that classically presents as localized clusters of small skin colored or erythematous papules that coalesce to form annular plaques. It was first described by Colcott Fox in 1895.<sup>1</sup> Lesions are typically asymptomatic with various color shades and can occur in all age groups. Other variants include generalized, perforating, subcutaneous, and patch type GA. Patch type GA, the rarest form manifests by erythematous or hyperpigmented patches, without scaling over the trunk and extremities.<sup>2,3</sup> It may take annular configuration, but shows the classic histo-pathologic findings of interstitial GA.<sup>2</sup> We hereby present a case of patch type granuloma annulare with histological features consistent with interstitial GA.

**CASE REPORT**

A 16-year-old girl presented with six months history of multiple, asymptomatic, slowly progressive, discrete as well as confluent, round to oval, non-scaly, non-indurated, non-tender, slowly progressive, hyperpigmented patches of various sizes over abdomen (Fig 1), lower back and both thighs. There was a difference in the shades of hyperpigmentation at the centre and periphery. She denied

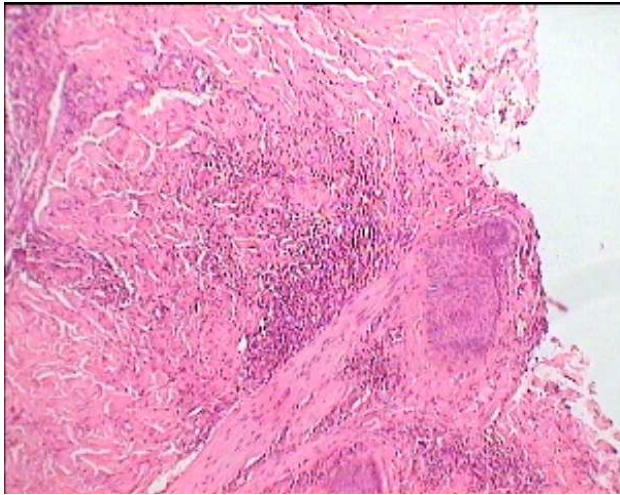
having any other medical illness and was not on any medications. Physical examination was otherwise normal.



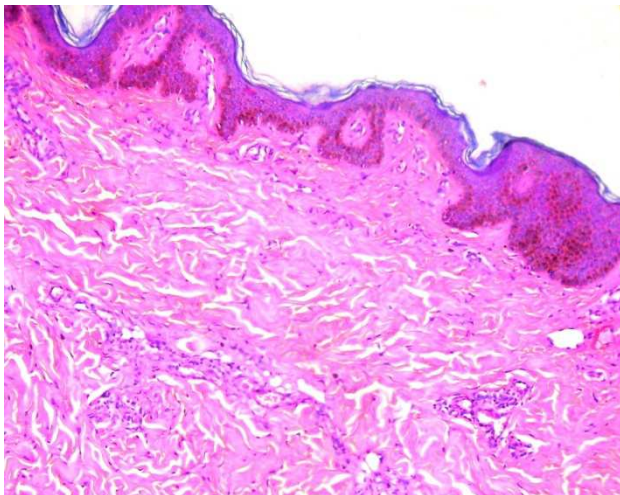
**Figure 1:** Multiple, discrete as well as confluent, round to oval, hyperpigmented patches over abdomen

Routine hematological and biochemical investigations were normal. A differential diagnosis of lichen planus pigmentosum, morphea and parapsoriasis was considered. Skin biopsy from the lesion over abdomen showed moderately dense superficial and deep peri-vascular and periappendageal lymphocytic infiltrate. The upper and the

mid reticular dermis showed several foci of necrobiosis with a few histiocytes scattered interstitially without well-formed palisading granulomas. (Fig 2 and 3)



**Figure 2:** Superficial and deep peri-vascular and periappendageal lymphocytic infiltrate with foci of necrobiosis and few histiocytes in upper and mid reticular dermis without well-formed palisading granulomas (H&E, 10x)



**Figure 3:** Basal hyperpigmentation and ill-formed palisading granulomas (H&E, 40x)

Based on clinical and histopathological features, a final diagnosis of patch type granulomas annulare with histological features of interstitial pattern was made. Patient was treated with tacrolimus 0.1% ointment, twice daily for 4 weeks. There was no significant improvement in the lesions. The lesions did not regress after performing biopsy.

## DISCUSSION

Five morphologic variants of GA have been described: localized, generalized, perforating, subcutaneous, and patch type.<sup>2</sup> Patch type granuloma annulare is a relatively recently described variant, which presents as erythematous to brown patches with or without scales, which may have annular configuration on the trunk or extremities.<sup>2,3</sup> Female predominance has been reported, as with other forms of GA.<sup>3</sup>

High index of suspicion and clinico-pathologic correlation is required to make a diagnosis of patch type of GA. The clinical differential diagnosis of patch type GA includes morphea, erythema annulare centrifugum and parapsoriasis.<sup>4</sup> Histologically GA can present in three patterns, necrobiotic granuloma, interstitial or incomplete form and granuloma of sarcoidal or tuberculoid type.<sup>5</sup> Interstitial pattern was the most common histological pattern in a study.<sup>6</sup> Interstitial pattern is most often found in patients with patch type GA, as was seen in our case.<sup>7</sup> Histologically interstitial GA shows 'busy dermis' with increased number of inflammatory cells in the dermis separated by connective tissue mucin. The infiltrate is composed of lymphocytes and histiocytes. Inflammatory cells are also noted around blood vessels and between collagen bundles without well formed area of necrobiosis.<sup>8</sup>

Differential diagnosis of interstitial type GA includes morphea, mycosis fungoides, xanthoma, interstitial granulomatous drug reaction and interstitial granulomatous dermatitis.<sup>3,4</sup> Histologically morphea can be confused with interstitial type GA but the subtle presence of histiocytes in an interstitial pattern usually allows a definitive diagnosis of GA.<sup>1</sup> Increased hyalinization of collagen is a feature of morphea, which is not seen in GA. Mycosis fungoides can have granulomatous infiltrate with a GA like pattern. This can easily be recognized by the presence of at least some intraepidermal lymphocytes.<sup>9</sup> Xanthoma can be differentiated from interstitial pattern of GA on the basis of foamy appearance of histiocytes which is completely lacking in GA and there is also a lack of perivascular lymphocytic infiltrate in xanthomas.<sup>1</sup> Interstitial granulomatous drug reaction shows predominantly eosinophils, lichenoid changes at dermo-epidermal junction while tissue necrobiosis is rarely noted. Interstitial granulomatous dermatitis shows predominance of neutrophils and neutrophil fragments. Histiocytes, lymphocytes and eosinophils are also present within palisades of histiocytes around basophilic collagen fibers. Changes may involve full thickness of dermis.<sup>10</sup>

## CONCLUSION

The tendency of GA to remit spontaneously complicates accurate assessment of the efficacy of any treatment. Systemic therapies are not necessary because of asymptomatic nature of the disease. It is reported that patch type GA will respond to the same therapy as other types of GA.<sup>3,4</sup> Resolution of patch type GA after biopsy has also been reported.<sup>11</sup>

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