

## Interstitial Granulomatous Dermatitis (IGD)

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### Abstract

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We report the case of a 42 years old male patient suffering from skin changes, which appeared in the last 7-8 years. Two biopsies were performed during the evolution of the lesion. Both showed similar findings that consisted in a busy dermis with interstitial, superficial and deep infiltrates of lymphocytes and histiocytes dispersed among collagen bundles, with variable numbers of neutrophils scattered throughout. Some histiocytes were clustered in poorly formed granuloma that included rare giant cells, with discrete palisades and piecemeal collagen degeneration, but without mucin deposition or frank necrobiosis of collagen. The clinical and histologic findings were supportive for interstitial granulomatous dermatitis. Interstitial granulomatous dermatitis (IGD) is a poorly understood entity that was regarded by many as belonging to the same spectrum of disease or even synonym with palisaded and neutrophilic granulomatous dermatitis (PNGD). Although IGD and PNGD were usually related to connective tissue disease, mostly rheumatoid arthritis, some patients with typical histologic findings of IGD never develop autoimmune disorders, but they have different underlying conditions, such as metabolic diseases, lymphoproliferative disorders or other malignant tumours. These observations indicate that IGD and PNGD are different disorders with similar manifestations.

We report the case of a 42 years old male patient suffering from skin changes as presented in Fig. 1, which appeared in the last 7-8 years. The physical examination revealed the presence of a large, round, brownish plaque with whitish atrophic dotted areas on its surface, of 8x6 cm, with well-defined margins, located on the posteroinferior region of his left arm. His medical history was positive for insulin dependent diabetes mellitus with an episode of ketoacidosis in the past, chronic pancreatitis, cholelithiasis, chronic antrum gastritis with negative *Helicobacter Pylori* tests. The patient's blood

profile, including routine tests, CRP, C3, C4, *Borrelia Burgdorferi* IgG and IgM, Quantiferon, Ac anti-HBC, Ag Hbs were all within normal levels.

Two biopsies were performed during the evolution of the lesion (in 2012 and 2017 respectively). Both showed similar findings that consisted in a busy dermis with interstitial, superficial and deep infiltrates of lymphocytes and histiocytes dispersed among collagen bundles, with variable numbers of neutrophils scattered throughout (Fig. 2). Some histiocytes were clustered in poorly formed granuloma that included rare giant cells, with discrete

Palisades and piecemeal collagen degeneration, but without mucin deposition or frank necrobiosis of collagen. The clinical and histologic findings were supportive for interstitial granulomatous dermatitis.



Figure 1: Clinical aspect. a: Large erythematous plaque with dotted whitish areas on the surface; b: Close-up view

Interstitial granulomatous dermatitis (IGD) is a poorly understood entity that was regarded by many as belonging to the same spectrum of disease or even synonym with palisaded and neutrophilic granulomatous dermatitis (PNGD). Although IGD and PNGD were usually related to connective tissue disease, mostly rheumatoid arthritis [1], some patients with typical histologic findings of IGD never develop autoimmune disorders, but they have different underlying conditions, such as metabolic diseases, lymphoproliferative disorders or other malignant tumours. These observations indicate that IGD and PNGD are different disorders with similar manifestations [2].

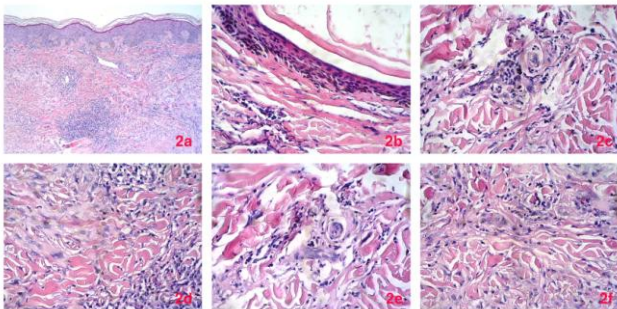


Figure 2: Microscopic features of the cutaneous lesion. 2a) Low power view showing interstitial granulomatous infiltrate, with patchy lymphocytes and vasodilatation; 2b) interstitial inflammation adjacent to a dilated follicle; 2c) interstitial granulomatous infiltrate with a few neutrophils; 2d) higher power view of the interstitial granulomatous infiltrate; 2e) interstitial granulomas with scattered neutrophils – note that mucin deposition is not a prominent feature; 2f) "piecemeal" degeneration of cross-sectional profiles of collagen bundles can be seen along the top of this figure – collagen bundles are surrounded by cleft-like spaces and small macrophages.

From the clinical point of view, the lesions in IGD may be variable: linear rope-like, papular, and even large plaques located on the extensor surface of the extremities [3]. Our main differential diagnosis was necrobiosis lipoidica, usually seen in the context of

diabetes mellitus. Although there was a history of diabetes, both biopsies in our case showed no prominent foci of collagen degeneration, and no layering of the histiocytic infiltrate to support this diagnosis.

Other entities that may be brought into discussion when a interstitial granulomatous pattern is encountered microscopically are interstitial granuloma annulare, histiocytoid Sweet syndrome and interstitial drug eruptions, but they could be reliably excluded on clinical basis.

The clinical case presented above shows the complex nature of IGD and its occurrence in non-rheumatologic setting. The presence of an interstitial granulomatous pattern of inflammation in biopsies from patients with systemic disease requires careful attention. The observer should not be sidetracked by the classic association of diabetes with necrobiosis lipoidica and overcall it. Similarly, it is to be kept in mind that IGD may not be necessarily associated with arthritis.

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