Two cases of Degos disease with different prognosis

Zhiliang Li, Peiying Jin, Baoxi Wang, Suying Feng

Jiangsu Key Laboratory of Molecular Biology for Skin Diseases and STIs, Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College, Nanjing, China
Head of the Institute: Baoxi Wang

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Degos disease, also known as malignant atrophic papulosis, is a rare and often fatal multisystem microvascular disease, which is characterized by pauci-inflammatory thrombotic microangiopathy. The clinical symptoms consist of disseminated, red papules with central umbilication or atrophy, which may progress to lesions with central necrosis and a telangiectatic rim, leaving porcelain-like depressed scars. The gastrointestinal tract and central nervous system may also be involved in some patients with Degos disease [1]. In the current report, we describe two clinically and pathologically typical cases of Degos disease with completely different prognosis.

Case 1: A 73-year-old woman presented with an 18-month, full-body, recurrent eruption of macula lesions. The lesions were initially noticed on the dorsal surface of the hands. In over 2 weeks, these macules evolved into ulcers and healed, leaving central atrophic scars. Similar lesions also rapidly appeared over the trunk and extremities (Figures 1 A, B). This patient had no family history of similar symptoms. Blood differential results were normal. Liver and kidney values, and levels of C-reactive protein, immunoglobulin, C3, and C4 were also normal. Other laboratory examinations showed negative results for the presence of antinuclear, anti-extractable nuclear antigen, antinuclear cytoplasmic, and anti-β2GP1 antibodies. We detected an index value of 45 RU/ml for anticardiolipin antibody in the serum (normal < 12 RU/ml). Abdominal ultrasonography and chest radiography were normal during the first visit. Pathological examination of a biopsy obtained from the skin on the back revealed wedge-shaped necrosis in the dermis (Figure 1 C). Lymphocyte infiltration in blood vessels surrounding necrotic areas and vascular thrombosis were observed (Figure 1 D). The lesions were partly controlled after 2 months of treatment with dipyridamole (75 mg/day) and aspirin (75 mg/day). The patient developed appendicitis and peritonitis during the next 6 months of follow up. Intravenous cyclophosphamide (600 mg/week for 2 months) was administered, but the patient died of a gastrointestinal tract perforation after 3 weeks.

Case 2: A 39-year-old Chinese woman was admitted to our hospital because of a 6-year history of recurrent maculopapules, which were distributed over the trunk and extremities. Physical examination of the skin revealed maculopapules (3–5 mm diameter) on the abdomen (Figure 2). Some lesions evolved into scars with porcelain-white atrophic centers. This patient also had no family history of similar symptoms. Histological and laboratory examinations were similar to case 1, except case 2 showed a negative result for anticardiolipin antibody. The lesions were recurrent despite treatment with dipyridamole (75 mg/day) and aspirin (75 mg/day). This patient did not develop any systemic disease during the follow-up period of eight years.

Degos disease is a rare, chronic, occlusive vasculopathic disease. The diagnosis is mainly based on characteristic skin lesions. No specific laboratory test can help with the diagnosis of this disease. Characteristic pathological manifestations, such as non-inflammatory endarterial thrombotic occlusion, wedge necrosis, and infarction of the dermis, can further confirm the diagnosis. Based on the typical cutaneous and pathological manifestations, both of the aforementioned cases could be diagnosed as Degos disease.

According to Heymann *et al.* [2], Degos disease can be divided into two types, namely, a malignant type with systemic manifestations, and a benign type with sole cutaneous involvement. The malignant type is often fatal and associated with poor prognosis because of systemic damage complications, such as bowel perforation, thrombosis of the cerebral arteries, or massive intracerebral hemorrhage. The benign type often has satisfacto-

Address for correspondence: Dr. Suying Feng, Jiangsu Key Laboratory of Molecular Biology for Skin Diseases and STIs, Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College, 12 Jiangwangmiao St, Nanjing, Jiangsu 210042, China, phone: +86 15298384673, e-mail: fengsuying2010@163.com
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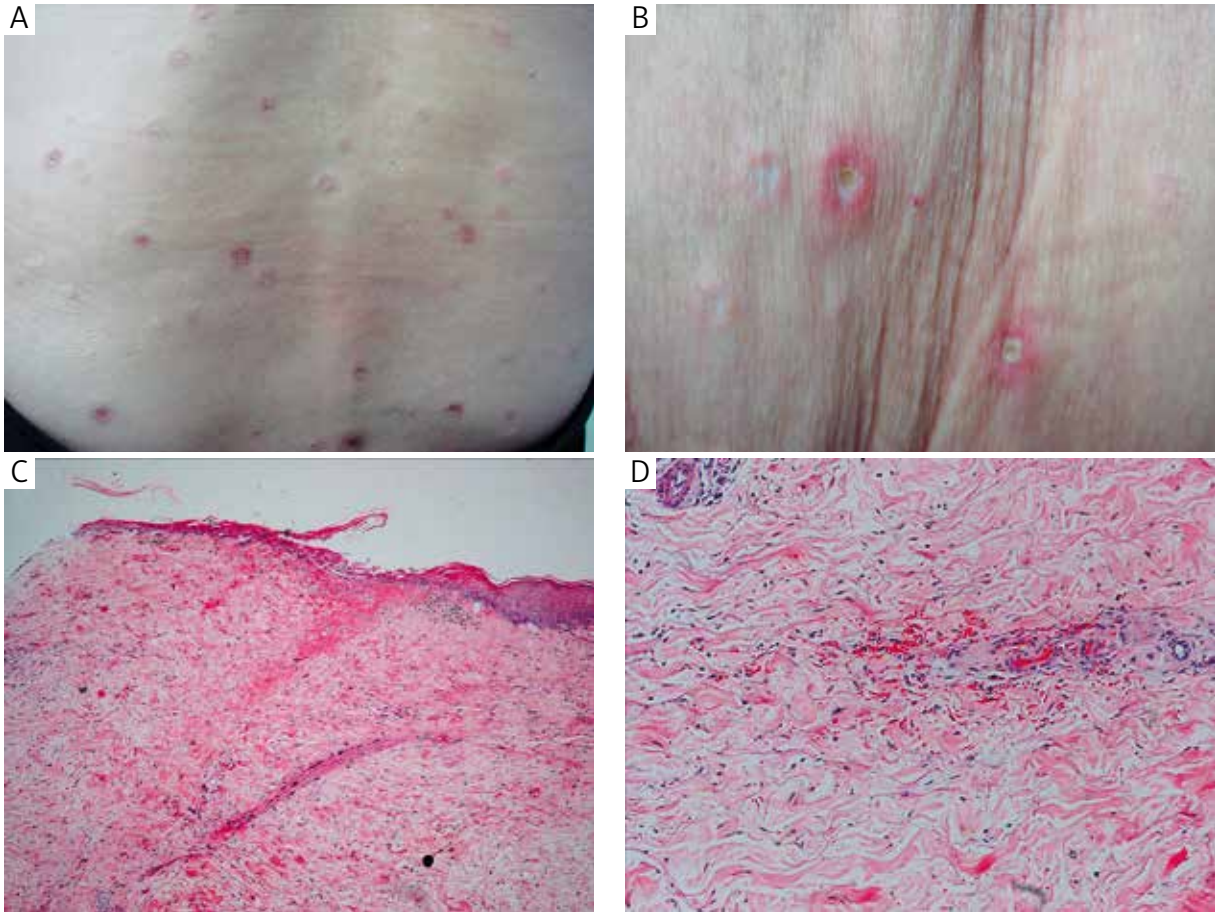

Figure 1. Disseminated red papules and erythematous atrophy on the back of patient 1 (**A**). White to pink papules with central, porcelain-white atrophic center on the abdomen of patient 1 (**B**). Histological examination of case 1 revealed the wedge-shaped necrosis in the dermis (**C**, H + E, 20× magnification) and interstitial infiltration of lymphocytes as well as extravasation of erythrocytes (**D**, H + E, 100× magnification)

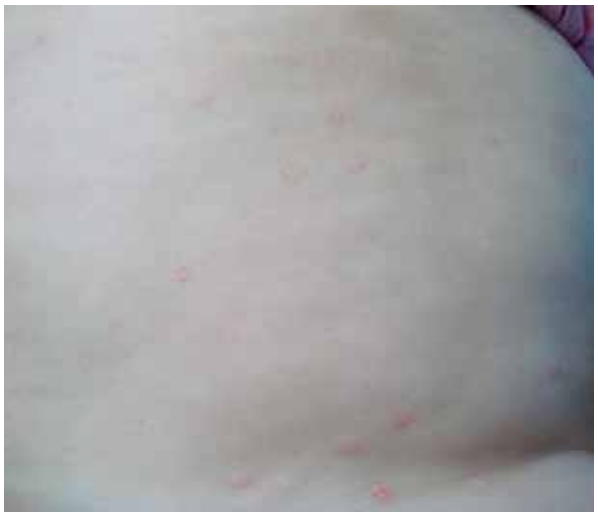

Figure 2. Skin lesions with characteristic erythematous border and porcelain-white atrophic centre on the abdomen of patient 2

ry prognosis. In the current case reports, no evidence of systemic involvement was found at onset of the disease. Case 1 showed the development of gastrointestinal damage after 6 months, and acute abdomen was the cause of death. Therefore, case 1 was classified as the malignant type of Degos disease. Case 2 showed recurrent skin lesions in 8 years, and no systemic involvement was found. Theodoridis *et al.* [3] reported that a benign disease diagnosis is highly probable (97% probability) after 7 years of monosymptomatic cutaneous disease. Thus, case 2 was classified as the benign type of Degos disease.

The pathogenesis of Degos disease remains unclear [1, 4]. Some factors, such as coagulation defects, vessel inflammation [5], and endothelial cell dysfunction [6], may contribute to the onset of the disease. High-titer anticardiolipin antibodies were detected in case 1, suggesting that coagulation defects possibly contributed to disease development. Magro *et al.* [7] demonstrated that C5-b9 and interferon-α (IFN-α) may have important functions in the occurrence of the disease by stimulating

inflammation of blood vessels. Auto-antibodies against the endothelium can be detected in the serum of some patients [1, 7], whereas the exact target antigen and pathogenicity of the auto-antibody are controversial.

No standard treatment is currently available for this disease. Antiplatelet agents, such as dipyridamole and aspirin, have been reported to reduce the number of skin lesions. With systemic involvement, the drugs used, such as heparin, warfarin, azathioprine, methotrexate, cyclosporine, and pentoxifylline, fail to improve disease prognosis. As described in case 1, treatment with cyclophosphamide after gastrointestinal involvement failed to inhibit disease deterioration. Given that C5-b9 and IFN-α have functions in the pathogenesis of this disease, drugs that target the complement system activation and IFN-α pathway may help block disease progression. For example, eculizumab, a monoclonal antibody against C5 complement component, is effective against the disease [8, 9]. Surgical intervention is the only choice in cases with gastrointestinal tract perforation, but recurrent perforations may still develop [10]. Systemic involvement can develop suddenly or years after the occurrence of skin lesions, indicating the need for annual follow ups. Follow-up treatments should include a clinical examination of the skin and additional systemic monitoring to assess long-term prognosis.

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