A Case of the Co-Existence of Subcorneal Pustular Dermatosis and Pyoderma Gangrenosum and a Review of the Literature

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Abstract

BACKGROUND: Subcorneal pustular dermatosis, also known as Sneddon-Wilkinson disease, can be classified as one of the neutrophilic dermatoses together with pyoderma gangrenosum. The development of both SPD and PG in the same patient has rarely been reported and may be a strong indicator of IgA dysglobulinemia.

CASE REPORT: We report the case of a 34-year-old woman with a 2-year history of relapsing pustular eruptions mainly affecting the abdomen, gluteus region, elbows, and the extremities. Four years after the onset of subcorneal pustular dermatosis (SPD), she developed pyoderma gangrenosum (PG) on her right hand. In literature, the coexistence of SPD and PG in the same patient has already been described. This co-occurrence might indicate a certain predisposition for immune dysregulation.

CONCLUSION: Although the two NDs are often associated with systemic diseases, these patients should be followed up for any malignancy because of the strong association between these disorders.

Introduction

Subcorneal pustular dermatosis (SPD), also known as Sneddon-Wilkinson disease, can be classified as one of the neutrophilic dermatoses (NDs) together with pyoderma gangrenosum (PG). The development of both SPD and PG in the same patient has rarely been reported and may be a strong indicator of IgA dysglobulinemia [1].

We describe the case of a patient exhibiting SPD lesions associated after two years’ duration with typical PG.

Case report

A 34-year-old woman was admitted to our hospital in 2015 with 2 years-history of relapsing pustular eruptions mainly affecting the abdomen, gluteus region, elbows, and the extremities (Figure 1). Clinical examination showed multiple small painful flaccid pustules varying in size from 0.5-2 cm that tended to coalesce to form an annular or circinate pattern and superficial crusts on the normal or mildly erythematous skin. A skin biopsy specimen showed subcorneal neutrophilic infiltrate with occasional eosinophils and absence of spongiosis or acantholysis. In the dermis, there was a dense perivascular infiltrate of neutrophils and occasional...
eosinophils (Figure 2). Direct immunofluorescence was negative.

In 2017, the patient developed on the right hand an area of painful, rapidly enlarging, ulceration (Figure 3). Clinical examination showed a 2.5 cm diameter-ulceration with violaceous borders and surrounding erythema. Similar lesions were also present on the lower extremities.

A skin biopsy found a mixed inflammatory infiltrate of neutrophils and lymphocytes, extending into the panniculus (Figure 4).

These findings were consistent with SPD diagnosis. Dapsone was introduced at a dose of 100 mg/daily resulting in gradual improvement of SPD with few residual scarring. She remained on dapsone for 20 months with almost complete remission of the neutrophilic disease.

Direct immunofluorescence was negative. Clinical and histopathologic features were compatible with PG diagnosis, according to Delphi Consensus criterion [2]. Laboratory investigations showed an increased white cell count (11,000/mm$^3$) with a normal differential. Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were elevated (ESR: 20 mm; CRP: 0.72 mg/dL). The blood chemistry, liver function and renal function tests were within the normal limit. Abdominal and pelvic ultrasound and computed tomography were normal. A gastroenterological visit excluded the presence of inflammatory bowel disease. The patient did not respond to topical and oral corticosteroids (prednisone 50 mg/daily for a month); cyclosporine was introduced at a dosage of 150 mg/daily (2 mg/kg) in association with tacrolimus 0.1% ointment, thus resulting in gradual improvement of PG, while SPD remained in remission [3].
Discussion

NDs are a group of heterogeneous skin diseases, with common features and a common histopathologic characterised by polymorphonuclear leukocyte infiltrates at various levels within the epidermis, dermis, or panniculus [4] (Table 1).

Table 1: NDs classification

<table>
<thead>
<tr>
<th>NEUTROPHILIC DERMATOSIS [4]</th>
<th>Superficial (epidermal)</th>
<th>Subcorneal pustular dermatosis</th>
<th>IgA pempigraphus</th>
<th>Bullous neutrophilic dermatoses</th>
<th>Other pustuloses</th>
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<td></td>
<td>En plaque (dermal)</td>
<td>Sweet’s syndrome</td>
<td>Neutrophilic eccrine hidradenitis</td>
<td>Erythema elevatum diutinum</td>
<td>Neutrophilic dermatitis</td>
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<td></td>
<td>Deep (dermal and hypodermal)</td>
<td>Pyoderma gangrenosum</td>
<td>Neutrophilic panniculitis</td>
<td>Aseptic abscesses</td>
<td>Granulomatous pyoderma</td>
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SPD is a rare chronic and relapsing skin disease, characterised by symmetrical sterile pustular eruption typically involving the flexural sites of the trunk and proximal limbs [1]. Although it is typically seen in women over the age of 40 years, there have been a few cases found in children [4] [5]. The etiopathogenesis of SPD remains unknown [6]. A trigger for aberrant neutrophil chemotaxis in SPD has not been identified. Faulty immune mechanisms and genetic susceptibility have been proposed, but no widely accepted hypothesis has been substantiated [3]. PG is a neutrophilic, non-infective skin disorder characterised by pustules or nodules, in which sterile leukocyte infiltrates at various levels within the epidermis, dermis, or panniculus [4] (Table 1).

Although PG and SPD may occur without association [14], it is of interest that this diseases combination has been reported in the presence of an IgA monoclonal gammopathy [12]. However, in 2006 a case of a 67-year-old man, affected by both PG and SPD simultaneously, who developed a bicalonal benign IgA and IgG kappa gammopathy have been reported [13]. Furthermore, Ahmad et al. described the case of a 57-year-old woman, with a 5-year history of PG before she developed SPD, associated with bicalon IgA and IgG gammopathy, that 12 years later, developed myeloma [1]. In our patient, no evidence of myeloma or myeloproliferative disorders has been found. Although PG and SPD may occur without the association of an underlying malignancy as in our case, these patients should be followed up for any malignancy because of the strong association between these disorders [14].

References


