Sweet's syndrome associated with multiple myeloma

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ABSTRACT

Introduction: Sweet's syndrome (SS) is an acute febrile neutrophilic dermatosis. It may be paraneoplastic in 10 to 20% of cases. Association with multiple myeloma (MM) is uncommon.

Case report: We report on a 73-year-old woman that developed SS 2 months after being diagnosed with IgG MM. Cutaneous lesions improved rapidly after chemotherapy for the MM. No recurrence of SS has taken place during the subsequent 2 years.

Discussion: Association of SS with MM has been rarely described in the literature. Only 14 cases of SS with MM have been reported. The secretory status of the MM may influence the occurrence of SS. SS seems to be related to IgG MM. Patients with IgG MM may have more risk of developing SS than those with other secretory types.

KEY WORDS

Sweet's syndrome, skin lesions, multiple myeloma

Introduction

Sweet's syndrome (SS) is an acute febrile neutrophilic dermatosis that presents in three clinical settings: (1) classical or idiopathic SS, (2) malignancy-associated or paraneoplastic SS, and (3) drug-induced SS (1). The majority of SS is idiopathic, accounting for more than 70% of cases. The paraneoplastic form accounts for around 10 to 20% of total described cases, predominantly with hematological malignancies (2), most often in acute myelogenous leukemia, lymphoma, and myelodysplastic syndromes (3). Association with multiple myeloma (MM) is uncommon; only fourteen cases have been reported in the literature (4). We report a patient that developed SS 2 months after being diagnosed with MM.

Case report

A 73-year-old woman presented at our department with a 7-day history of multiple, purplish-red infiltrated papules on the dorsa of the hands, fingers, wrists, and feet. Two months previously, she had been hospitalized in the Department of Rheumatology for cervical pain resistant to classic analgesics. Clinical, biological, and radiological investigations indicated IgG MM, and melphalan and prednisone chemotherapy was started.

Physical examination showed multiple, purple-red, infiltrated papules and nodules on the dorsal part of the hands, fingers, wrists, and feet (Fig. 1). Some of these lesions had central bullae (Fig. 2). No lesions of the mucosa were found. There was no fever and the patient was in good general condition.

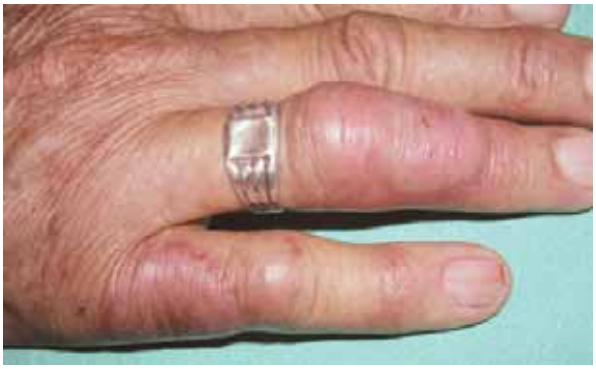

Figure 1. Infiltrated papules and nodules on the dorsal part of the fingers.

Histological examination showed a dense infiltrate under normal epidermis consisting mostly of neutrophils in the superficial dermis (Fig. 3). Neutrophil leukocytoclasia with nuclear fragmentation were observed. In the papillary dermis, marked edema with dilated blood vessels and turgescent endothelial cells were also seen. These clinical and histological findings were consistent with the diagnosis of SS.

Initial laboratory investigations revealed an increased erythrocyte sedimentation rate (ESR; 135 mm 1st h), with a normal full blood count. Serum protein electrophoresis and immunoelectrophoresis showed the monoclonal chain Kappa hypergammaglobulinemia G.

The patient was treated with topical corticosteroids twice a day. Cutaneous lesions had improved within 3 weeks. Chemotherapy for MM was applied. There was no recurrence of SS during an observation period of 10 months.

Discussion

SS is an acute neutrophilic dermatosis that was first described in 1964 by Robert Sweet (5). It is typically characterized by the abrupt onset of tender purplish-red papules, nodules, or plaques occurring on the face, neck, chest, and upper extremities, mostly in middle-aged females. The skin eruption can be preceded or accompanied by fever and general discomfort. Involvement of the eyes, joints, and oral mucosa as well as internal manifestations involving the lung, liver, kidneys, and central nervous system have been reported (4).

Laboratory investigations show an elevated ESR and peripheral leukocytosis with neutrophilia. Skin biopsy reveals marked edema in the papillary dermis and a dense infiltrate of mature neutrophils in the superficial dermis. Swelling of the endothelial cells, dilatation of the small blood vessels, and leukocytoclasia are also frequently present (1).

Differential diagnoses include mainly erythema multiforme, erythema elevatum diutinum, erythema nodosum, and pyoderma gangrenosum (1).

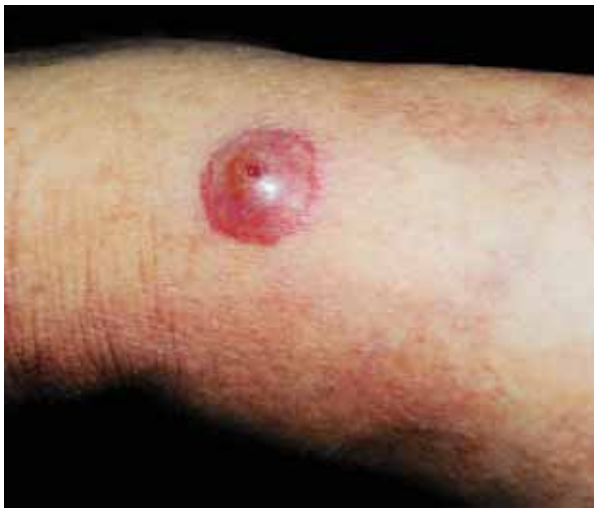

Figure 2. Some of the lesions had central bullae.

In two-thirds of cases, SS is idiopathic. This classical or idiopathic form may be associated with infections of the upper respiratory or gastrointestinal tracts, inflammatory bowel disease, or pregnancy. In less than 20% of cases, SS occurs as a paraneoplastic syndrome mainly in hematological malignancies, most commonly myelogenous leukemia, lymphoma, and myelodysplatic syndromes (2, 3). Association with MM has been rarely described in the literature. Only 14 cases of SS with MM have been reported (4).

SS can also be drug-induced. Several drugs have been reported to induce SS, such as minocycline, trimethoprim-sulfametoxazole, hydralazine, and carbamazepine (6). Our patient was treated with Melphalan and prednisolone. A cause-and-effect role of these drugs may be excluded: after the lesions improved, no recurrence of SS was seen even after continuing chemotherapy.

The etiopathogenesis of SS remains unclear. It seems

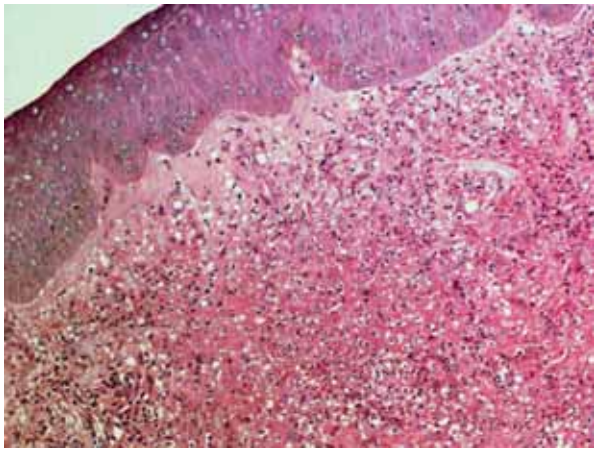

Figure 3. Marked papillary dermis edema with a dense infiltrate of mature neutrophils in the superficial dermis.

to be related to a hypersensitivity reaction, triggered by several unknown factors such as infections, drugs, and malignancies, and leading to cytokine stimulation and subsequently neutrophil activation. Granulocyte colony stimulating factor (G-CSF) is a neutrophil-specific growth factor that may play a crucial role in the pathogenesis of SS. Indeed, several reports have described SS after G-CSF administration (7). Furthermore, studies have demonstrated increases of endogenous G-CSF levels in the acute phase of SS (8, 9). G-CSF stimulates neutrophil production, activation, and chemotaxis, leading to peripheral neutrophilia and neutrophilic infiltration of the dermis (8, 9).

The secretory status of the MM may influence the occurrence of SS. Among the 14 associated cases reported in the literature, seven cases were secreted IgG, four were IgA, one was chain free kappa, and two cases had unknown immunoglobulin secretion (4). Our MM patient expressed the IgG type. SS seems to be related to IgG expression in MM. However, this frequent association could also be related to the fact that IgG is the most common immunoglobulin secreted in MM overall. Studies have demonstrated that IgG plasma cells display a unique constellation of leukocyte adhesion molecules involved in leukocyte traffic (10). It was also demonstrated that G-CSF increases the expression of Fc receptors for IgG on neutrophils (11). Thus patients with IgG MM may have more risk of developing SS than those with other secretory types of MM.

Systemic glucocorticoids are the accepted treatment for SS. Systemic symptoms and cutaneous manifestations rapidly improve after starting therapy. Localized SS lesions may be treated topically with high potency corticosteroids, or alternatively intralesional corticosteroids can be used (1). Our patient was treated with topical steroids with a good response within 3 weeks. Many other treatments have been reported to be successful in SS, such as potassium iodide, colchicine, indomethacin, dapsone, doxycycline, cyclosporine, cyclophosphamide, chlorambucil, and clofazimine (6). Without treatment, SS lesions may persist for weeks or even months, or they may eventually resolve spontaneously (1).

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