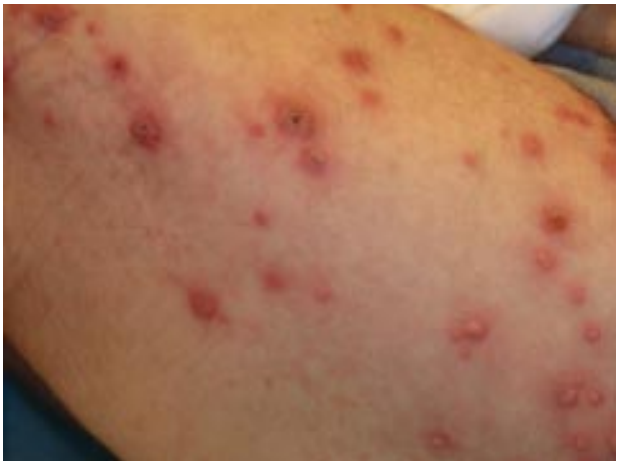
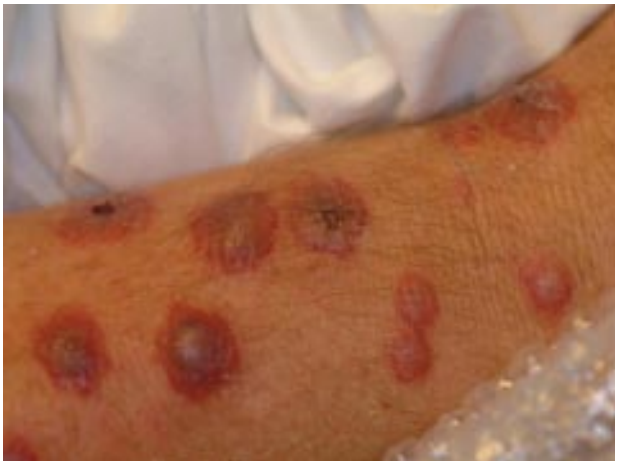
What Is Your Diagnosis?





A 58-year-old man with acute myelogenous leukemia presented with fever and firm edematous papules and nodules that rapidly progressed to involve his trunk and extremities. Many of the lesions had a pseudovesicular appearance and a few had secondary ulceration from rupture of overlying bullae. The patient concomitantly developed hemoptysis that progressed to hypoxemic respiratory distress requiring mechanical ventilatory support.

PLEASE TURN TO PAGE 405 FOR DISCUSSION

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The Diagnosis: Bullous Sweet's Syndrome With Neutrophilic Alveolitis

Histopathologic examination of a skin biopsy specimen from the right anterior thigh revealed dense papillary dermal edema with abundant diffusely scattered neutrophils (Figure 1A) and slight spongiosis of the epidermis with occasional neutrophils (Figure 1B). A pulmonary evaluation ruled out infection and malignancy as etiologies for the respiratory failure. When the patient presented with high fever, he was placed on empiric broad-spectrum intravenous antibiotics and subsequently treated with antifungals without substantial improvement. Fungal, bacterial, and mycobacterial cultures from blood and bronchoalveolar lavage were negative for organisms, excluding infectious pneumonia. Bronchoalveolar lavage revealed a sterile neutrophilic infiltrate, and, in combination with computed tomographic scans, neutrophilic alveolitis was diagnosed. The patient was treated with intravenous corticosteroids, and cutaneous lesions and respiratory symptoms quickly improved. Despite a slow taper of the corticosteroids, the patient had a relapse of respiratory distress that progressed to acute respiratory distress syndrome and led to his death. Given the clinical presentation and histopathologic findings, a diagnosis of bullous Sweet's syndrome with neutrophilic alveolitis was made.

Sweet's syndrome, also known as acute febrile neutrophilic dermatosis, is characterized by fever, neutrophilia, abrupt onset of tender and erythematous cutaneous plaques or nodules (Figures 2 and 3), and a dense dermal neutrophilic infiltrate on histopathologic examination.[1] Since the original description by Robert Douglas Sweet, MD, in 1964,[1] subsequent case reports have expanded the clinical and pathologic features of this condition. Sweet's syndrome is now generally classified as idiopathic or classic, malignancy associated, drug induced, or pregnancy related.[2]

More than 20% of patients with Sweet's syndrome have associated malignancies, most commonly acute myelogenous leukemia.[3] Malignancy-associated Sweet's syndrome can have a unique clinical presentation characterized by a more severe cutaneous eruption that may develop vesicular, bullous, or ulcerative changes.[3-6] Lesions are frequently observed on the lower extremities, trunk, and back. Oral mucosal involvement also may be observed. Multiple recurrences and associated platelet and leukocyte count abnormalities also are more common in this group. Furthermore, extracutaneous involvement is seen in up to 50% of patients with malignancy-associated Sweet's syndrome. The musculoskeletal, renal, and ocular systems are most commonly involved; pulmonary involvement, however, is rare.[3,7-10]

Patients with pulmonary involvement usually present with progressive dyspnea and dry cough. Unilateral or bilateral interstitial infiltrates, pleural effusions, and pulmonary opacities on chest x-rays can be observed. Sputum and blood cultures from patients with Sweet's syndrome with pulmonary involvement are negative for organisms, and results of lung

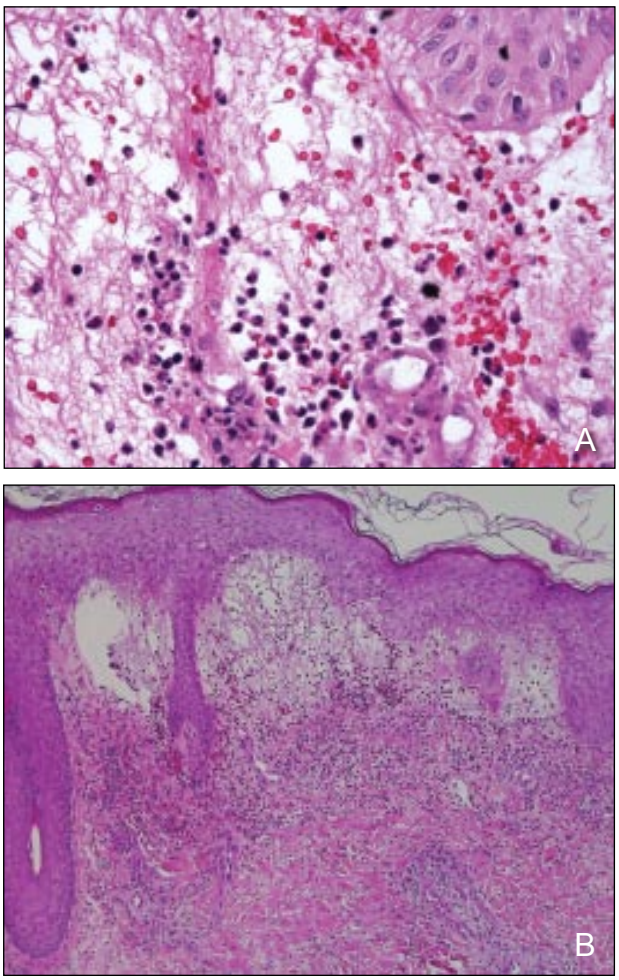

Figure 1. Skin biopsy specimen from the right anterior thigh reveals a dense infiltrate of neutrophils in the upper dermis with marked edema in the papillary dermis (H&E, original magnification ×400)(A). Spongiosis of the epidermis also is noted (H&E, original magnification ×100)(B).

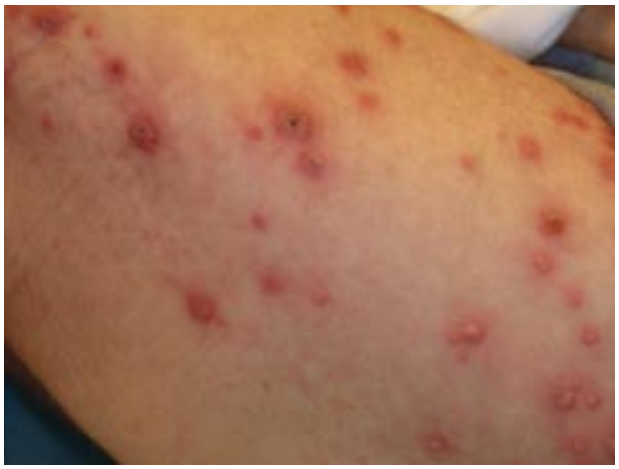

Figure 2. On the proximal thigh, new and old papules and nodules can be seen. The newer papules are pink and edematous but without frank vesicle or bulla formation. The more mature nodules are purpuric and some have central ulceration secondary to rupture of overlying bullae.

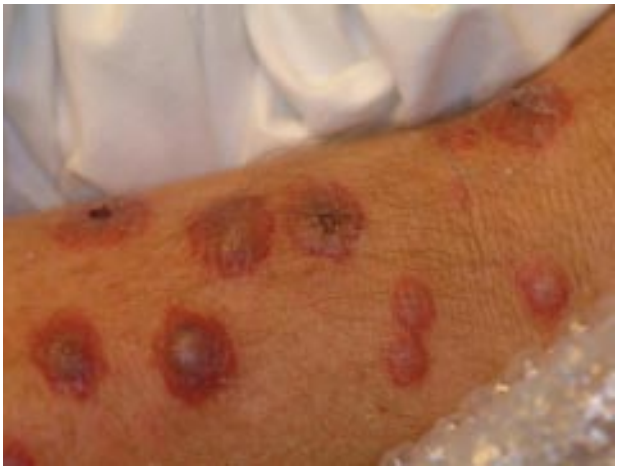

Figure 3. Pseudovesicular appearance of nodules on the forearm as well as frank bulla and secondary ulcerative changes.

biopsies reveal a dense neutrophilic infiltrate similar to skin biopsy specimens.[11-13] More than 20 cases of pulmonary involvement in Sweet's syndrome have been reported,[14] but to our knowledge, only 3 cases have been fatal.[12,15,16] Interestingly, all 3 patients developed blistering lesions similar to our patient.

The clinical course of cutaneous and extracutaneous Sweet's syndrome usually parallels each other, with both appearing simultaneously and responding to therapy similarly. The therapeutic mainstay for Sweet's syndrome is systemic corticosteroids, which should be tapered slowly over 4 to 6 weeks.[17] With tapering of the corticosteroids, recurrence of lesions has been noted. In malignancy-associated Sweet's syndrome, recurrence of lesions also may herald a recurrence of the malignancy itself.[3]

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