Fever, rash and neutrophilia: not always an infectious cause

Introduction

Sweet's syndrome classically comprises fever, neutrophilia and the onset of a painful eruption. Typically the rash is composed of tender erythematous papulonodules and plaques, often with pseudovesiculation. Histologically it is composed of a neutrophilic dermal infiltrate in the absence of infection (Sweet, 1964). It may occur in response to an infectious or inflammatory trigger, an underlying malignancy or as part of a drug hypersensitivity reaction.

This article presents two patients with two subtypes of Sweet's syndrome. A 44-year-old female patient developed classical Sweet's syndrome in response to a B-haemolytic streptococcal sore throat and the second patient, a 71-year-old man, developed malignancy-associated Sweet's syndrome in response to myelodysplastic syndrome. Both patients were treated with oral steroids in addition to therapy for their underlying illness, leading to rapid improvement. The article highlights this uncommon but important differential when assessing a febrile patient.

Discussion

Sweet's syndrome is an uncommon disorder which occurs worldwide with no known racial predilection. Characteristic skin findings comprise tender erythematous papules and nodules which often coalesce to form plaques, and dramatic dermal oedema may lead to pseudovesiculation. In addition to the cutaneous features, patients not uncommonly develop myalgia, arthralgia and conjunctivitis (Cohen, 2007).

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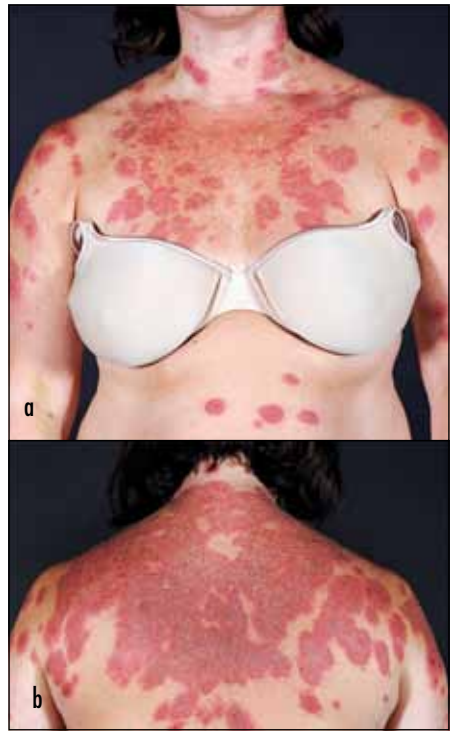
In approximately 50% of cases an underlying association is discovered, falling into three main disease patterns (Kemmett and Hunter, 1990):

1. Classical Sweet's syndrome (patient 1) occurs in women aged 30–50 years in association with an upper respiratory or gastrointestinal infection
2. Malignancy-associated Sweet's syndrome (as in patient 2) accounts for 20–25% of all cases, has an equal sex distribution and is most commonly associated with myeloid leukaemia
3. Drug-induced Sweet's syndrome is frequently caused by granulocyte colony-stimulating factor although a large number of other medications have also been implicated (Paydaş et al, 1993).

Untreated the condition will persist for weeks to months and heals without scarring. Aside from treating any underlying cause if demonstrated, the treatment of Sweet's syndrome is mainly with topical, intralesional and systemic corticosteroids. A variety of steroid-sparing agents have

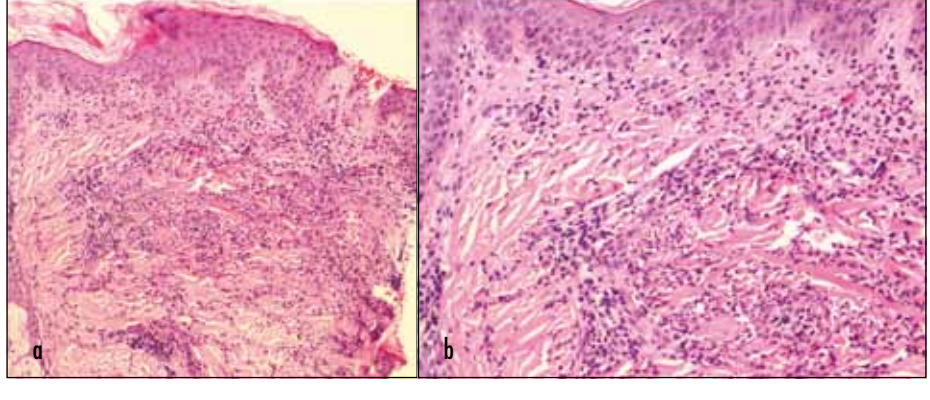
Figure 1. Clinical features of Sweet's syndrome in patient 1.



Case Report 1

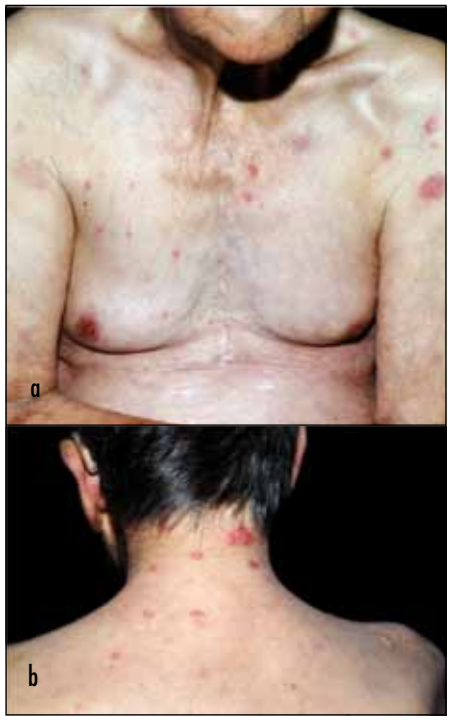
A 44-year-old woman presented with a 2-day history of a painful rash (*Figure 1*), having had a recent sore throat. Examination revealed well-circumscribed, erythematous plaques with pseudo-vesiculation on her trunk, neck and limbs. Baseline investigations revealed mild neutrophilia; a throat swab grew beta haemolytic Streptococcus group A. Skin biopsy showed acute and chronic neutrophil-predominant inflammation with leukocytoclasis (*Figure 2*). Focal perivascular inflammation was seen but there was no evidence of vasculitis. Special staining for microorganisms was negative. A diagnosis of classical Sweet's syndrome secondary to streptococcal throat infection was made. Oral prednisolone 30 mg and penicillin V 500 mg four times daily combined with topical clobetasol proprionate ointment lead to improvement within 2 weeks with no recurrence.

Figure 2. Histopathological features of Sweet's syndrome. a. Low-power and (b) high-power view of acute and chronic neutrophil-predominant inflammation with leukocytoclasis from patient 1.



been used (Horio et al, 1980; Bourke et al, 1997). Recurrences are common, seen in 30% of all cases and 50% of malignancy-associated disease. BJHM

Figure 3. Clinical features of Sweet's syndrome in patient 2.



Bourke JF, Keohane S, Long CC, Kemmett D, Davies M, Zaki I, Graham-Brown RA (1997) Sweet's syndrome and malignancy in the U.K. *Br J Dermatol* **137**(4): 609–13
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Kemmett D, Hunter JA (1990) Sweet's syndrome: a clinicopathologic review of twenty-nine cases. *J Am Dermatol* **23**(3): 503–7
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LEARNING POINTS

- Sweet's syndrome comprises fever, neutrophilia and a characteristic rash.
- The rash of Sweet's syndrome is typically painful rather than itchy.
- Sweet's syndrome may be classical, associated with a haematological malignancy or secondary to a drug trigger.
- Treatment of Sweet's syndrome is mainly with systemic steroids.
- Sweet's syndrome recurs in about 30% of patients.

Case Report 2

A 71-year-old man presented with a 10-month history of an intermittent painful eruption. Examination revealed multiple erythematous plaques over the upper trunk, posterior neck and proximal arms (*Figure 3*). Skin biopsy revealed chronic perivascular neutrophilic inflammation with no evidence of microorganisms on special staining. Baseline bloods revealed a mild macrocytic anaemia. A diagnosis of malignancy-associated Sweet's syndrome secondary to haematological malignancy was suspected. Bone marrow confirmed myelodysplastic syndrome (refractory cytopenia with multilineage dysplasia).

Because he had multiple comorbidities the patient was not a candidate for stem cell transplantation and has subsequently been managed supportively. As his myelodysplastic syndrome could not be cured his Sweet's syndrome remains intermittently active and is controlled with topical and systemic steroids as required, having only partially responded to ciclosporin, rapamycin and infliximab.

Painful nodule at the laparoscopic port site

A 29-year-old man had undergone a laparoscopic low anterior resection for rectal cancer. The histology was reported as pT4a N2 Mx poorly differentiated adenocarcinoma. Two months after his operation he presented with a painful right-sided port site lump and no cough impulse. A computed tomography scan excluded port site hernia (*Figure 1*). He underwent exploration of the port site which demonstrated a dumb-bell-shaped 3 x 3 cm mass, and the area was excised with a wide margin down to the peritoneum. The resultant defect was repaired with a composite mesh. Histology confirmed it to be a port site metastasis. The patient received adjuvant chemotherapy.

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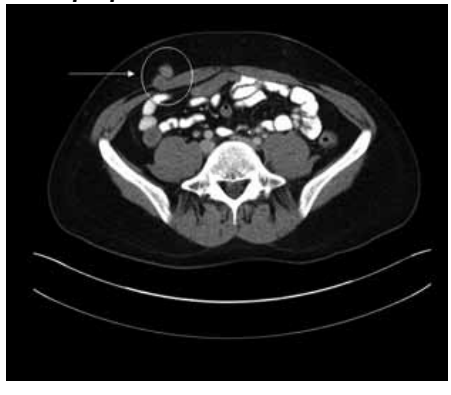
Figure 1. Transverse section of computed tomogram of the abdomen demonstrating a dumb-bell shaped port site metastasis.



Laparoscopy is increasingly performed for cancer of the rectum. Port site implantation was common during the initial use of laparoscopic colectomies. However, with technical improvements and use of wound protectors, the rate of port site tumour implantation has dropped remarkably, and is now rarely seen. This image raises the awareness of port site metastasis. Any patient presenting with a painful lump and no cough impulse following a laparoscopic colonic resection should be viewed and treated as having a possible port site metastasis until proven otherwise. BJHM