# Atypical sweet's syndrome associated with non Hodgkin lymphoma

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## Abstract

Sweet's Syndrome (SS) is a rare neutrophilic dermatosis characterized by sudden appearance of painful indurated erythematous papules, nodules and plaques mainly on face, neck and extremities which is usually associated with high fever. It is well known to be associated with haematological or solid tumors (20-25%). Non Hodgkin lymphoma is a well recognized but rare association. Malignancy associated SS (MASS) can present with number of atypical clinical and histological features and carries a poor prognosis. Here we report a case of atypical SS associated with non Hodgkin lymphoma.

A 62 years old lady presented with multiple painful erythematous skin plaques mainly on limbs for 2 weeks duration. She also gave a history of chronic non-productive cough, shortness of breath, bilateral hip joint pain and facial swelling for past 3 months without fever. Examination revealed mild pallor, multiple erythematous indurated nodules and confluent plaques on both forearms and left lower leg. She had no peripheral lymphadenopathy or hepatosplenomegaly. Diagnosis of atypical SS was made and screening for internal malignancy revealed associated para-aortic lymphadenopathy. Diagnosis of Non Hodgkin lymphoma was confirmed by histological and radiological evaluation.

She was successfully treated with 6 cycles of combined chemotherapy but subsequently died after a year with complicated spinal metastasis.


## Introduction

Sweet Syndrome (SS) also known as acute febrile neutrophilic dermatosis was first described by Dr Robert Sweet in 1964. Exact pathogenesis of SS is unknown and is thought to be an altered hypersensitivity reaction to bacterial, viral, drug or tumor antigen. Sweet's syndrome presents in three clinical settings: classical or idiopathic (80%), malignancy-associated (20%) and drug-induced. Classical Sweet syndrome is often preceded by an upper respiratory tract infection. It may be associated with inflammatory bowel disease, autoimmune diseases and pregnancy. It mostly affects females aged between 30-50 years. Paraneoplastic SS may preceed, co exist or follow the manifestations of underlying malignancy. Drug induced SS is a rare entity, mostly caused by drugs such as G-CSF, all trans retinoic acids, minocycline and oral contraceptive pill.

SS is characterized by sudden appearance of painful indurated erythematous papules, nodules and plaques mainly on face, neck, trunk and extremities usually accompanied by high fever. Mucosal involvement is rare with classic disease. Rare presentations of SS include: bullous SS, subcutaneous SS and neutrophilic dermatosis of dorsal hands. Diagnosis of SS is based on characreristic clinical features, dense dermal neutrophilic infiltrate without vasculitis in skin biopsy and neutrophil leukocytosis on blood smear. Corticosteroids remain the mainstay of treatment for classic SS. Adjuvant steroid sparing agents such as cyclosporine and cyclophosphamide have been used with varying success. Treatment of the underlying disease or malignancy leads to resolution of cutaneous lesions of systemic disease associated and malignancy associated SS. Withdrawal of offending drug is the treatment for drug induced SS.

## Case

A 62 year old lady presented with painful erythematous nodules and plaques over forearms, left knee and both ankles of two weeks duration. Her associated symptoms were bilateral hip joint pain and mild facial swelling of 3 months duration. She also had a history of non productive cough and mild shortness of breath. She had no fever, rthralgia or myalgia. Examination revealed large erythematous/violaceous indurated plaques on both forearms with few papules and pustules at the margin. Similar lesions were observed over left knee joint and both ankles. Few scattered erythematous, indurated nodules were distributed on forearms. Her systemic examination was unremarkable.

Clinical diagnosis of SS was made and while awaiting investigations she was started on prednisolone and cutaneous lesions subsided over two weeks. Though she had good initial response to corticosteroids, new lesions appeared with the tapering of steroids. Investigations revealed:

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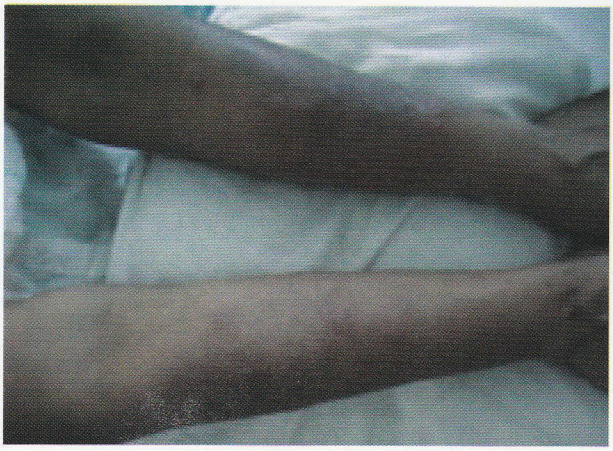

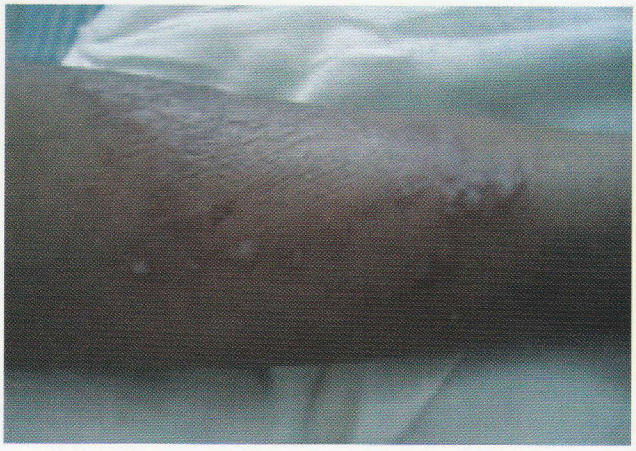

| *Investigation* | *Result* |
|---|---|
| FBC - WBC | 20400/mm$^3$ |
| N | 83% |
| L | 23% |
| Hb | 10.4g/dl |
| PLT | 327000/mm$^3$ |
| Blood picture | Neutrophil leukocytosis with left shift and few reactive lymphocytes. ? myeloproliferative disorder |
| ESR | 61mm/h<br>88mm/h |
| Liver/renal functions | Normal |
| CXR | Normal |
| X Ray lumbosacral spine | No bone metastasis |
| USS abdomen/pelvis | Multiple para-aortic lymph nodes with normal liver and spleen |
| CT abdomen/pelvis | Multiple para-aortic lymph nodes with uniform hepatomegaly |

Skin biopsy - Diffuse dermal infiltration of mature neutrophils and dermal edema. Conclusion - Sweet's syndrome (Figure 1)

Lymph node - Infiltration of medium sized atypical lymphocytes with vesicular nuclei and conspicuous small nucleoli Conclusion - Non Hodgkin lymphoma (Figure 2)

We proceeded with investigations and excluded metastatic disease. Following referral to oncologist, she was started on combination chemotherapy. She successfully completed 6 cycles of chemotherapy and post therapeutic investigations revealed complete disappearance of lymph nodes. She continued to have pain in both hips and died a year later with complicated neurological disease caused by spinal cord metastasis.

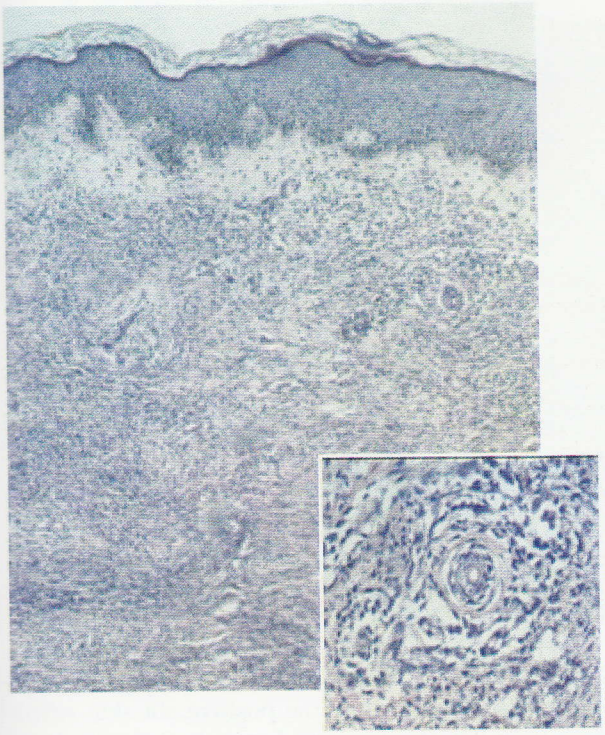

**Figure 1.**

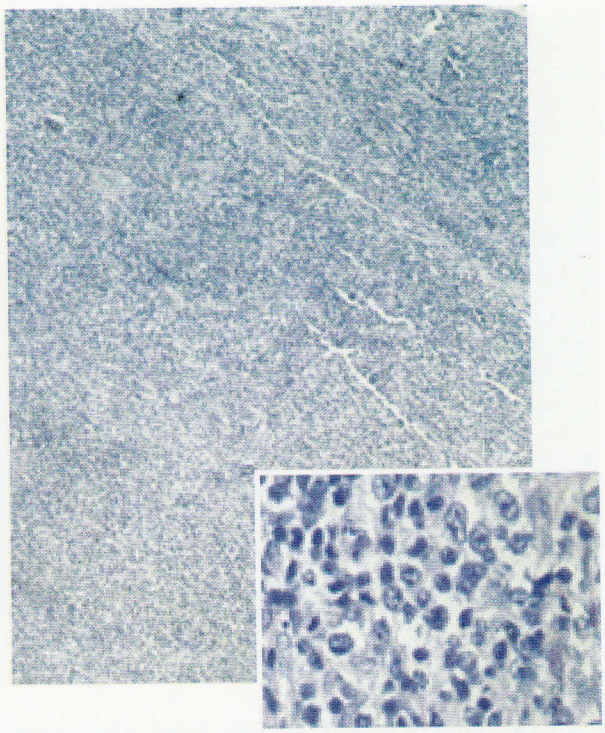

**Figure 2.**

## Discussion

Malignancy associated SS (MASS) accounts for 20-25% cases of SS. It is more likely to occur in association with haematological malignancy (85%) than solid tumors (15%). Acute myeloid leukemia is the most frequently associated tumor and chronic myeloid leukemia, lymphoma, multiple myeloma and other paraproteinaemias are also well recognized associations. Non Hodgkin lymphoma has rarely been reported in association with SS.

Frequently reported solid tumors include tumors of gastrointestinal tract, genitourinary tract and breast. Like in our case SS can be the first manifestation of malignancy or may precede the diagnosis by months or years. This type of SS can be present with multiple atypical features. Atypical features of our patient were absence of fever, lack of constitutional symptoms, cutaneous lesions involving lower extremities, soft tissue swelling in face and extracutaneous involvement. Other reported atypical manifestations include, severe oral involvement and extensive cutaneous involvement with bullous and ulcerated lesions. Atypical laboratory findings are well documented in MASS and include cytopenias (thrombocytopenia, anaemia), absence of neutrophil leukocytosis and high ESR. Certain histopathological features such as pronounced epidermal change, histiocytoid variant and neutrophil eccrine hidradinitis are considered as atypical which favor underlying malignancy. MASS is less responsive to steroids and carries a poor prognosis.

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