

## Woman with Fever and Skin Lesions

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### Abstract

**Context:** Acute febrile Neutrophilic Dermatoses, also known as Sweet's Syndrome, was first described in 1964 by Dr. Robert Sweet. There have been described four many subtypes: classic type (majority of cases), cases associated with neoplasia, cases associated with inflammatory disease and cases associated with pregnancy. There have been also seen cases associated with drugs.

**Case Report:** We report the case of a 43-year-old woman who presented fever and skin lesions which affected mostly the neck, neckline and upper-back. The biopsy was compatible with Sweet's Syndrome (SS). Laboratory testing revealed a positive serology for acute Parvovirus B19 infection.

**Conclusion:** After excluding main cases of SS, we hypothesize that in our patient it was related to acute Parvovirus B19 infection.

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### Introduction

Acute febrile Neutrophilic Dermatoses, also known as Sweet's Syndrome, was first described in 1964 by Dr. Robert Sweet. We report the case of a 43-year-old woman who presented fever and skin lesions which affected mostly the neck, neckline and upper-back. The biopsy was compatible with Sweet's Syndrome (SS). Laboratory testing revealed a positive serology for acute Parvovirus B19 infection.

### Case Report

A 43-year-old woman presented with fever and skin lesions which affected mostly the neck, neckline and upper-back, but also head, extremities and palms (**Figures 1 and 2**).

They were erythematous plaques with vesicular surface and pseudo-purulent content. She had no relevant antecedents and was under contraceptive treatment. She home-worked and had a healthy cat. No mountain outings neither insect bites. The rest of physical examination was normal. Laboratory testing revealed 16.130 leukocytes/ mm<sup>3</sup> (normal values between 4.000 and 12.900) with 73% of neutrophils, C-reactive protein level of 12.8 mg/dl (normal value, < 0.5-1), erythrocyte sedimentation rate of 57 mm/h (normal values 3-12) and a positive serology for acute Parvovirus B19 infection. A biopsy was performed and topical corticosteroids were initiated. A body CT scan discarded a neo formative process. The biopsy reported subepidermal vesicle with dermal edema and an inflammatory and neutrophilic infiltrate. After 20 days of topical corticosteroid treatment,

a descending pattern was followed. The lesions left residual hypopigmented macules and no new lesions appeared (**Figure 3**). It was diagnosed of Sweet's Syndrome in relation to Parvovirus B19 infection.



**Figure 1** Neck initial lesions.



**Figure 2** Upper back initial lesions.



**Figure 3** Residual hypopigmented macules after topical treatment.

## Discussion

When a patient presents with fever and erythematous-edematous skin lesions with suspected Sweet's Syndrome (SS), a biopsy is needed to establish the diagnosis [1,2]. Our patient meets the two major criteria - abrupt onset of painful erythematous plaques and histopathological findings of dense neutrophilic infiltrate without evidence of leukocytoclastic vasculitis- and two minor criteria – fever  $> 38^{\circ}\text{C}$  and laboratory tests abnormalities (high erythrocyte sedimentation and C-reactive protein, leukocytosis and neutrophilia) - to establish the diagnosis of classical SS [1,3]. It had only skin involvement.

SS can be associated with streptococcal upper respiratory tract or gastrointestinal infection, rheumatoid arthritis or thyroid disease, which were ruled out [2,4,5]. Our patient had a positive serology for acute Parvovirus B19 infection that was probably related with the dermal presentation. Few cases have been reported in literature showing this association [4].

## References

- 1 Villarreal VCD, Candiani JO, Martinez AV (2016) Sweet Syndrome: A review and update. *Actas Dermosifiliogr* 107: 369-378.
- 2 Ginarte M, Toribio M (2009) Síndrome de Sweet. *Medicina Clínica* 133: 31-35.

## Conclusion

Before establishing the diagnosis, drug-induced disease or a malignant process should be discarded. Our patient was under contraceptive treatment for years but no new drugs had been introduced. The CT body scan and complete analysis were normal. Usually, systemic corticosteroids at a high dosage with gradual posterior reduction are needed to treat SS. In localized lesions, a topical corticosteroid can be used. Our patient lesions rapidly improved although they were extensive probably related to resolution of the infection. We hypothesize that the Sweet's syndrome in our patient was related to acute Parvovirus B19 infection.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

- 3 Cohen PR, Kurzrock R (2003) Sweet's syndrome revisited: a review of disease concepts. *Int J Dermatol* 42: 761-778.
- 4 Heath MS, Loayza OAG (2019) Insights into the pathogenesis of sweet's syndrome. *Front Immunol* 10: 414.
- 5 Martinez FAMC, Martinez NC, Izquierdo JAA, Fernández RS (2010) Sweet's Syndrome: A retrospective study of 21 patients. *Piel* 25: 369-375.