CANINE STERILE NEUTROPHILIC DERMATOSIS RESEMBLING SWEET'S SYNDROME : TWO NEW CASES

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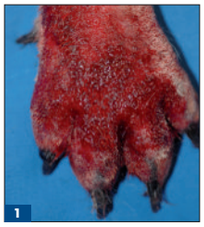
Sterile neutrophilic dermatosis is an uncommon skin condition in dogs *(Johnson et al, 2009, Gains et al, 2010)*. In humans, clinical and histopathological lesions might be the consequence of an unusual hypersensitivity reaction to bacterial, viral or tumour antigen *(Freedberg et al, 2003)*.

CASE 1

A 3-year-old female Cocker spaniel was exhibited for lameness, fever and generalized intense pain. Two days after the onset of general signs, dermatological signs appeared and were characterized by a sudden erythematous, purpuric and pustular rash, involving the face, legs and feet (Figs 1-4). None extracutaneous disease preceding the cutaneous eruption was reported, but a severe leukocytosis with absolute neutrophilia was noticed.

Histopathological findings (Figs 5-8) revealed a diffuse neutrophilic dermatitis with a heavy infiltrate of mature neutrophils throughout the dermis and even in the subcutis and variable multifocal leukocytoclasis without true vasculitic lesions. There was marked edema of the superficial dermis, leading to subepidermal vesiculation in one case. The overlying epidermis was either involved with neutrophilic exocytosis (neutrophilic spongiotic vesicles and luminal infundibular folliculitis). Bacterial culture from intact pustules was sterile. A spontaneous cure was progressively observed after the skin rash.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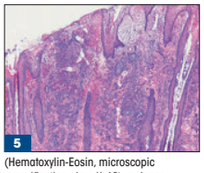
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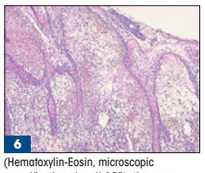
(Hematoxylin-Eosin, microscopic magnification view, X 40): a dense inflammatory infiltrate in the whole dermis. Overlapping epidermis is hyperacanthotic and ulcerated.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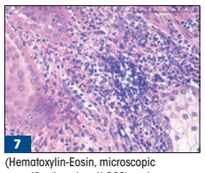
(Hematoxylin-Eosin, microscopic magnification view, X 100): the upper dermal layer is very edematous, the overlaying epidermis is acanthotic and spongiotic with follicular pustules.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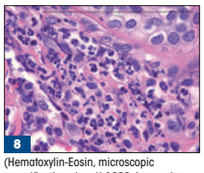
(Hematoxylin-Eosin, microscopic magnification view, X 200): a dense inflammatory infiltrate in the upper dermal layer contains a prominent component of neutrophils with leukocytoclasia.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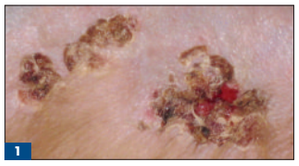
(Hematoxylin-Eosin, microscopic magnification view, X 1000, immersion objective): the diffuse dermal inflammatory infiltrate contains a prominent component of neutrophils.

CASE 2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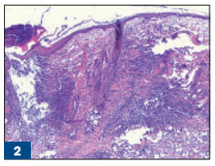
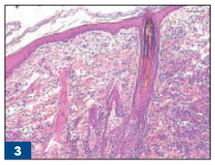
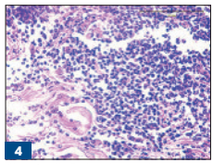

2
(Hematoxylin-Eosin, microscopic magnification view, X 40): a dense and diffuse dermal inflammatory infiltrate extends to the panniculus. Some follicular pustules are ruptured and ulcerate the epidermis.


3
(Hematoxylin-Eosin, microscopic magnification view, X 100): the upper dermal layer is midly edematous and the overlaying epidermis is lightly acanthotic.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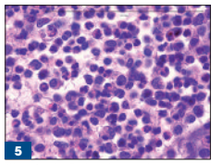
(Hematoxylin-Eosin, microscopic magnification view, X 200): a dense inflammatory infiltrate in the upper dermal layer contains an admixture of of neutrophils and eosinophils with leukocytoclasia.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(Hematoxylin-Eosin, microscopic magnification view, X 1000, immersion objective): the diffuse dermal inflammatory infiltrate contains a prominent component of eosinophils.

A 3-year-old spayed female Chihuahua was presented with a 5 month history of painful, papular, pustular, ulcerative and crusted dermatitis, progressively involving the face, the dorsal trunk and the thighs (Fig 1). A sudden rash with hyperexia and acute digestive disorders was noticed.

Histopathological findings (Figs 2-5) revealed a dense and diffuse dermal inflammatory infiltrate extended to the panniculus. Some follicular pustules were ruptured and ulcerated the epidermis. The upper dermal layer was midly edematous; the overlaying epidermis was lightly acanthotic. A dense inflammatory infiltrate in the upper dermal layer contained an admixture of neutrophils and eosinophils with leukocytoclasia. The diffuse dermal inflammatory infiltrate contained a prominent component of eosinophils.

Bacterial culture from intact pustules was sterile. A spontaneous cure was progressively observed after the skin rash. Three months later, a relapse was observed with similar cutaneous lesions, hyperexia, digestive disorders. The dog recovered in three days with a short-term corticotherapy. Since 6 months, no relapse was notified.

DISCUSSION

Sweet's syndrome is a rare human skin condition characterised by four criterias such as fever, sudden onset of cutaneous signs like plaques, painful nodules, neutrophilic leukocytosis and infiltration of the dermis by normal neutrophils.

In both cases, these criterias allowed us to diagnose a sterile neutrophilic dermatitis resembling Sweet's syndrome.

Aetiology is currently unknown. An unusual hypersensitivity reaction to bacterial, viral, tumoral antigen is suspected.

Human Sweet's syndrome is classified into three categories depending on the clinical setting : classic or idiopathic Sweet's syndrome, malignancy-associated Sweet's syndrome and drug-induced Sweet's syndrome.

During the classic Sweet's syndrome, the majority of patients have antecedents of upper respiratory infection. Viral or bacterial gastrointestinal infection, recent vaccination, pregnancy or inflammatory diseases, especially inflammatory bowel diseases are the other underlying conditions associated with classic Sweet's syndrome.

These cases are related to a classic Sweet's syndrome, with gastrointestinal signs in one case. In both cases, prognosis is good with a spontaneously favorable or excellent response to glucocorticosteroid therapy.

REFERENCES

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