

Systemic Lupus Erythematosus Discoid in dog (*Canis familiaris*): case report

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Abstract: *The Cutaneous Lupus Erythematosus is a complex autoimmune diseases of great importance in veterinary dermatology, because it presents inflammatory processes important generated by the deposition of immune complexes in the tissues, as well as the possibility of progressing to the systemic form of the disease. The objective of this study was to review the literature of the variants of Systemic Lupus Erythematosus found in dogs and describe the clinical case of a dog of the breed Samoyed with Lupus Erythematosus Discoid. The animal had typical lesions on the face and had its definite diagnosis through clinical evaluation and histopathological examination of the lesion. The treatment protocol included the use of immunosuppressants such as cyclosporine and topical corticosteroids, obtaining great success and remission is almost full of injuries.*

Keywords: *Discoid Lupus Erythematosus, cyclosporine, autoimmune dermatopathy, dog.*

I. Introduction

Immunological diseases of the skin can be classified as primary diseases or autoimmune and secondary diseases or immunomediate [1,2] Pemphigus and Bullous Pemphigoid, Mucous Membrane Pemphigus and acute Vogt-Koyanagi-Harada Syndrome are dermatological autoimmune diseases, and pemphigus and the complex Systemic Lupus Erythematosus, more frequent among the canine dermatoses immunological [2,3].

The process of formation of autoimmune disease is not yet known exactly. The complexes formed of antigen and antibody are deposited in the basal membrane of the skin, in small vessels in Systemic Lupus Erythematosus (SLE) and in Cutaneous Lupus Erythematosus (LEC) or in various organs in SLE [3]. The subtype of the LEC with the most common clinical presentation is called Systemic Lupus Erythematosus Discoid (SLED) that can be generalized or localized. In dogs, cutaneous lesions are similar to those of the human form [4-6]. The disease is manifest with greater frequency in breeds Collie, Pastor of Shetland, German Shepherd and Siberian Husky [3,6,7,8,9]. It can also happen in Akita, Bull Terrier, Border Collie, Teckel, Fox Paulistinha, Great Dane dogs and Rottweiler and dogs without race defined [9,10]. Other authors mention the occurrence in breeds Spaniel Breton and Pointer German [1] and Chowchow Malamute of Alaska [9] and Samoyed [7].

The Systemic Lupus Erythematosus Discoid (SLED) was not entirely elucidated pathogenically. You can occur secondarily to a viral infection, by genetic inheritance, sun exposure or reaction to medication. The disease can worsen with heavy exposure to sunlight and increase in warm seasons of the year [9]. The diagnosis of the SLED is based on the exclusion of systemic signs of SLE, in addition to nonspecific tests such as complete blood count, biochemical profile, urinalysis, smear [3-5,11]. Specific tests such as monoclonal anti-nuclear (AAN) and histopathological tests are needed for definitive diagnosis of the disease. The test AAN is positive in 5% of cases, and may indicate seroconversion for LES [3,5].

A biopsy should be performed of old lesions, preferably to the lip and the muzzle, because these locations are more likely to have a positive and conclusive diagnosis. It prevents collect of injuries traumatised with crusts and in the healing process [3-5,11]. The therapy to control the disease, aims to reduce clinical signs, using therapies that minimize adverse effects. The amount and type of medication varies according to each case, and may be used high dose at the start of treatment [6].

The treatment includes non-exposure to the sun, using environments protected from the sun to prevent the nasal lesions made by solar radiation. The use of systemic antibiotics for long duration prevent the secondary pyoderma, and dogs that start the immunosuppressant treatment along with antibiotics have a survival rate higher. The amount of systemic medication should be reduced, as the improvement of the lesions [6]. The prognosis is favorable, but the treatment is the entire life of the animal. Can be formed sequels such as crusts, permanent depigmentation and, rarely, squamous cell carcinoma [6]. The present study aimed at the case study of a Samoyeda dog with diagnosis of Discoid Erythematosus Lupus. It also sought to compare the diagnostic technique of the case described with the most recent literature on the subject, as well as the treatment based on oral cyclosporine associated with local applications with corticosteroid ointment.

II. Case Report And Discussion

The research was approved by the Ethics Committee on Animal Use of UNIFESO in regular meeting at 16/05/2013. A bitch of the breed Samoyed [7], weighing 23 kg, stricken with Lupus Erythematosus Discoid (LED) was consulted in June 2011, It was examined in June 2011, with crust around the eyes and on the nose, erythematous lesions and depigmentation of the nose, without itching according Rhodes [3] and Hnilica [6].

The animal was met previously in another clinic, where it was done scraping of the skin lesions with an award of dermatitis. This first histopathological examination was not specific, leading to an initial and inconclusive diagnosis of dermatitis, which led to an inadequate treatment for the disease, resulting in the development of clinical signs [3,5,11].

On that occasion, the veterinary doctor advised a treatment with clemastine fumarate 1.4 mg, ½ pill once a day for 21 days, prednisolone 20 mg, 1 pill once a day for 21 days and topical use of pomade of neomycin sulphate 0.25g, dexamethasone 0,025g, nystatin 107 IU and benzocaine 1.0g, to apply on the lesions twice a day until the healing. This treatment was initiated soon after the orientation, and carefully performed by the owner. After 21 days the animal returned to the clinic with worse symptoms.

Prednisolone is described by Hnilica [6] as a treatment for the LED, however, in this case, it was not used the dosage of immunosuppressive regimen suggested by the author. It was not described the use of topical antibiotics, but recommended the oral use of medication for the improvement of lesions, as well as describe the use of topical corticosteroids as a treatment option [6]. At the time of return to the consultation, the animal showed erythematous lesions with ulceration and formation of crust around both eyes and nasal plan (figure 1). Also presented depigmentation nose and hyperkeratosis of the footpad of hind limbs and the anterior left, considered a rare appearance by Rhodes [3] and Hnilica [6].



Figure 1 – (A) Front view of the head of the animal showing the erythematous lesions and formation of crust around the two eyes and nose

The bitch was with normal vital signs, intact skin in rest of the body, the mouth without ulcers, was active, urinating and defecating normally and eating well. Blood was collected to complete blood count, serum biochemistry with urea, creatinine, ALT and AST. Was also collected material from the wounds of the nasal plane and the eyes for biopsy as recommended by Rhodes [3], Gross et al. [4], Oberkirchner, Linder, Olivry [5] and Bedolla Alva, Salas Garrido, Constantino Casas [11].

The blood count showed red series without disturbance and white series with neutrophilic leukocytosis, relative lymphopenia and monocitopenia on. The research of hematozoa was negative. The new histopathology presented a more conclusive result than the first, presenting dermatitis liquenoide with hydropic degeneration of basal cells, apoptosis of epidermal cells and depigmentation of the skin, configuring LED [3,5,11].

This time, the chosen treatment after diagnosis of the disease included the use of imunomossupressor cyclosporine, as well described by Hnilica [6], at a dose of 10 mg per kilogram of body weight. This medication has not been associated with any oral glicocorticoide or antibiotic, but it was used the ointment the ointment of corticosteroids in lesions, as described by the same author. However, the animal lives in a hot region with great exposure to the heat of the Sun. No protective conduct was taken against the strong sun, different procedure than recommended by Hnilica [6]. After three months, when it returned to the review, the bitch showed good response to treatment with significant improvement of lesions. The topical drug was maintained and the amount of cyclosporin was reduced, according to Hnilica (2012).

In April 2013 the animal was stabilized clinically, the muzzle kept the discoloration, as predicted by the literature of Hnilica (2012), but the other lesions in the nasal plane and around the eyes healed completely with normal growth of coat in the region (Figure 2). However, even with the use of medication, still appears crusts in the regions of the foot pads (Figure 3).



Figure 2 - A) front view of the animal showing the improvement of lesions B) dorsal view of the phase of the animal showing the growth of the face and depigmentation of the nose



Figure 3 - Left Front Leg showing crack of footpad

III. Final Considerations

The accurate diagnosis of Discoid Lupus Erythematosus, increases the chances of survival of the animal. The clinical treatment of the disease is long and expensive, but when done correctly by the owner, can lead to prolonged remission of symptoms. The association of topical medication with systemic immunosuppression showed to be very efficient, in the case reported. With almost two years after diagnosis of the disease, the animal continues using the medication maintenance, on alternate days, and there were no further significant lesion, confirming the effectiveness of the treatment performed.

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