Nodular Dermatofibrosis in a German Shepherd Dog: Case Report

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Abstract: An 7-year-old male German shepherd dog not neutered was attended presenting several cutaneous nodules ranging from 0.5-3 cm in diameter at least a one year history, located mainly in thoracic and pelvic limbs, with progressive weight loss over two months. Fine needle aspiration biopsy and pelvic and thoracic limbs nodules excision biopsy were performed. After histopathological diagnosis, nodular dermatofibrosis diagnosis was determined and abdominal ultrasound was performed for possible renal cysts evaluation. The animal received treatment to control secondary bacterial infection. It is necessary to carry out histopathological examination and ultrasound to identify possible renal cysts and for definitive diagnosis. There is no specific treatment for nodular dermatofibrosis.

Key words: Canine, paraneoplastic syndrome, renal cysts, nodules

INTRODUCTION

Nodular dermatofibrosis is a rare paraneoplastic syndrome of multiple collagenous nerves associated with renal and uterine tumors. It was first reported in 1983 in a German shepherd dog (Suter et al., 1983) but there’s a small number of reports in literature since then. Macroscopically, nodular dermatofibrosis is characterized by multiple dermis and subcutaneous nodules which in severe cases coalesce (Goldschmidt and Hendrick, 2002). These nodules are firm, well circumscribed, with 0.5-4.0 cm in diameter, symmetrically distributed around the limbs, neck, back and ventral trunk (Lingaas et al., 2003). It is necessary to perform an ultrasound examination to identify renal cystic changes (Suter et al., 1983). This report aims to describe the clinical, histopathological and ultrasound findings of a nodular dermatofibrosis in a German shepherd dog case.

CASE REPORT

A male German shepherd dog, 7 years old, not neutered was attended presenting several cutaneous nodules ranging from 0.5-3 cm in diameter (Fig. 1) at least a one year history, located mainly in thoracic and pelvic limbs, with progressive weight loss over two months. Blood samples, to perform blood counts and serum chemistry profile (creatinine, alanine aminotransferase and urea) were collected. The blood count reference values, serum activity of ALT enzyme (10-109 UI L⁻¹), creatinine (0.5-1.7 mg dL⁻¹) and urea (8-28 mg dL⁻¹) were within the reference range. Fine needle aspiration biopsy, culture, antibiogram and pelvic and thoracic limbs nodules excision biopsy were performed. The bacterial culture showed no growth. The nodule microscopic evaluation

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findings associated with clinical signs were consistent with nodular dermofibrosis. It is reported that the nodules formation is due growth factor beta 1 (Transforming growth factor-TGF-beta1) overexpression, a potent desmoplasia stimulator which was documented in human patients with cancer and severe nasal carcinoma. A recent study demonstrated an increased TGF-beta1 expression in kidney and skin (hair follicle and kidney tubules, respectively) of German shepherd dog with nodular dermofibrosis when compared to the same breed dogs with no disease (Liium and Moe, 1985). The literature suggests that in male dogs, the nodular dermofibrosis is associated with kidneys cancer (Lingaas et al., 2003). This disease is a paraneoplastic syndrome that precedes the kidney cancer formation (Suter et al., 1983; Atlee et al., 1991). It was recommended to the animal's owner animal ultrasound control every two months and monthly renal function (urea, creatinine and urinalysis) evaluation. At the diagnosis, the animal was treated with Cephalexin and Clorexidine 2% bathing to control pyoderma. There is no specific treatment for this condition, due the bilateral nature of kidney cancer (Suter et al., 1983; Liium and Moe, 1985). Once determine the diagnosis, the animal must be monitored as the cyst renal size and renal function tests to detect renal failure. The nodular dermofibrosis prognosis is unfavorable, once all of the animals develop kidney’s cancer. Recent studies, in which researchers examined several nodular dermofibrosis cases associated with kidney’s cancer, showed that the average lifetime after skin changes diagnosis is three years and all of the dogs die due the uremia (Atlee et al., 1991; Lingaas et al., 2003). The histopathological diagnosis is essential to differentiate from keloids fibromas and nodular sears, once these changes have different prognosis and treatments (Goldschmidt and Hendrick, 2002).

CONCLUSION

The nodular dermofibrosis is a rare paraneoplastic syndrome that primarily affects German shepherd dogs. It is necessary to carry out histopathological examination and ultrasound to identify possible renal cysts and for definitive diagnosis. There is no specific treatment for nodular dermofibrosis.

REFERENCES


