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Endocrine Dermatoses of Testicular Tumor Origin: Incidence, Clinical and Clinico-Pathological Status and Outcome

P.Selvaraj[1], S.R.Srinivasan, A.P.Nambi, B.Nagarajan and B.Murali Manohar

Centre of Advanced Faculty Training in Veterinary Clinical Medicine, Ethics and Jurisprudence, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai-600 051.

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Abstract

In a study of 336 dogs with symmetric alopecia, 185 were found to have endocrinal involvement. Incidences of Sertoli cell tumor related dermatoses was high (20.54%), followed by seminoma (2.70%) and interstitial cell tumor (1.08%) related dermatoses. Surprisingly, the owners in the study were unaware of the cryptorchid status of their dogs.

Key words : Endocrine Alopecia – Testicular Tumors - Dogs

Symmetrical alopecia is a frustrating problem for veterinarians and dog owners. The most common cause of it is endocrinopathies, with hypothyroidism and hyperadrenocorticism being more frequent (Scott *et al.,* 2001). It can be a manifestation of internal disease as in cryptorchidism. This paper describes about endocrine dermatoses associated with testicular tumors, their incidences and their impact on canine health.

Materials and Methods

Male dogs presented with symmetrical alopecia were screened for testicular tumor related dermatoses. Data on breed and age were collected for demographic studies. Selected dogs were subjected to detailed clinical examination as suggested by Feldman and Nelson (1996) and Scott *et al., loc. cit*). Status of testicles, status of alopecia, and additional signs were assessed. Hemato-biochemical studies and testosterone levels were assessed as suggested by Bond (2004).

[1]*Corresponding author* : Email : drselvaraj@tanuvas.org.in

Results and Discussion

Among 12,742 dermatological cases examined, 336 dogs exhibited symmetrical alopecia. Out of 336 dogs screened, 185 were found to have endocrinal involvement. The incidence of endocrine dermatoses with sertoli cell tumor was found to be high (20.54 %), followed by seminoma (2.70%) and interstitial cell tumor (1.08%). Sertoli cell tumor was observed to be the common cause of endocrine alopecia in male dogs (Miller, 2004). The incidence of it was found to be 2.7 percent in New York College of Veterinary Medicine Study (Scott, 1982) and 8.33 percent in University of Montreal Study (Scott and Paradis, 1990). When compared to these reports, the incidence in the current study was quiet high (20.54%), which might be due to the absence of mandatory neutering programs in Chennai.

Non-descript dogs had a higher incidence (33%) followed by Spitz (17%) and mixed breed dogs (15%). Dogs aged 8 years were commonly affected (24%), followed by 7 year olds (20%) and 6 year olds (0.17%). The minimal age of onset was 4 years and the maximal age of onset was 14 years with the average age as 8.23±0.30 years. Weaver (1983) and Scott *et al., loc. cit*) observed that middle aged to older dogs were commonly affected. The same was observed in this study too. All dogs in this study were primarily presented for hair loss. None of the owners were aware of their dog's cryptorchid status. Commonly observed signs included bilaterally symmetrical alopecia (100%), brittle hairs (90%), hyperpigmentation (75%), scale formation (60%) and seborrhea (40%). Systemic signs included prominent nipples (80%), pendulous prepuce (60%), male feminization behaviour

(25%), testicular enlargement (20%), reduction in testicular size (15%), absence of one testis (30%) and absence of both testes from the scrotal sac (25%). These findings were in accordance with the reports of Weaver (*loc. cit*) and Scott *et al.*, *loc.cit*).

Clinico-pathological changes included significant reductions in hemoglobin (7.89±0.35 g/dl) and erythrocytic count (5:19 ± 0.11x10^6 cells/cumm) indicating anemic status and significant leucocytosis (9071.52 ± 315.14 cells/cumm) with neutrophilia (5906.52 ± 215.62 cells/cumm) and lymphocytosis (2873.18 ± 108.15 cells/cumm). These findings were more or less in agreement with the observations of Feldman and Nelson (*loc. cit*). There was a normal biochemical profile in affected dogs except for a significant elevation in alkaline phosphatase (196.28±4.99 IU/L). However it was not that high to consider it as pathological. The alkaline phosphatase levels were generally found to be increased in cases of a variety of neoplasia (Center, 2007). The reduction in testosterone (1.10±0.03 ng/dL), in the present study was in concurrence with the reports of several authors (Feldman and Nelson, *loc.cit* and Miller, *loc. cit*)

Regrowth of hair following castration were reported in many studies (Weaver, *loc. cit* and Miller, *loc. cit*). Regrowth of hair was complete after 16 weeks of castration in this study. The observation of high number of cases (46) of testicular tumors warrants due attention. Gross *et a.,l* (2005) opined that the Sertoli associated skin disease was most frequently seen in the regions of World, where neutering is less common. Absence of early neutering in Chennai coupled with this higher incidence necessitates mandatory early neutering practices to prevent complications.

Summary

The incidence of endocrine dermatoses of testicular tumor origin was higher in dogs with sertoli cell tumors (20.54%). Feminization signs in symmetrically alopecic male dogs with anemic signs must trigger clinical suspicion. Regrowth of hair was observed after castration. Mandatory assessment of young dogs for cryptorchidism and early neutering are the best options.

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