Case Report

Intra - Abdominal Sertoli Cell Tumour in a Dog and its Surgical Management

M. Gokulakrishnan[1*], L. Nagarajan[2], Mohamed Ali[1], Azhar[2] and Jothi Meena[3]

Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai-600 007, Tamil Nadu, INDIA

[1]Department of Clinics
[2]Department of Veterinary Surgery and Radiology
[3]B.V.Sc. Scholar

***Corresponding author:** drgocool vet@yahoo.co.in

Rec. Date:	Jan 05, 2020 05:35
Accept Date:	Feb 13, 2020 11:51
DOI	10.5455/ijlr.20200105053502

Abstract

A 11-year-old intact male dog was brought to Madras Veterinary College Teaching Hospital with a history of alopecia, hyperpigmentation, cryptorchid and anorexia. Haemato-biochemical analysis was done, which revealed thrombocytopenia, neutrophilia shift to left and a marginal increase in ALP levels. Soft contoured mass was observed on lateral abdominal radiograph with absence of metastasis. Ultrasound guided biopsy was made to rule out the nature of tumour cells that confirmed intra-abdominal sertoli cell tumour. An exploratory laparotomy was made and intra- abdominal testicle was excised and removed. The intra scrotal testicle which was atrophied was resected following which a scrotal ablation was made. The animal was reviewed after a month which revealed reduction in alopecia, hyperpigmentation and uneventful recovery.

Key words: Dog, Exploratory, Intra-Abdominal Testicle, Sertoli Cell Tumour

How to cite: Gokulakrishnan, M., Lakshmanan, N., Ali, M., Meena, J., & Asarudhin. (2020). Intra - Abdominal Sertoli Cell Tumour in a Dog and its Surgical Management. International Journal of Livestock Research, 10(3), 196-200. doi: 10.5455/ijlr.20200105053502

Introduction

In male dogs, testicular tumours (TT) are the most common neoplasms (Nodtvedt *et al*., 2011). Among all canine genital tumours, TT constituted >90% cases, and dogs are found to be mostly affected animals among canines (North *et al.*, 2009). The TT are sometimes classified as mixed tumours because of their occurrence in the same testis as two different forms (MacLachlan and Kennedy, 2002). Primary TTs are histologically classified into sex cord-stromal (gonadostromal) tumours, mixed germ cell-sex cord stromal tumours and germ cell tumours (D'Angelo *et al.*, 2012). Sertoli cell tumours (SCT) and Leydig cell tumours (LCT) are sex cord-stromal tumours and seminomas (SEM) are germ cell tumours. Cryptorchidism is an important risk factor for the development of TT, with the risk for the development of sertoli cell tumours

been higher than that for seminomas (Sivasudharsan *et al.*, 2017). The SCTs are slow growing, non-invasive with low malignancy. However, the likelihood of becoming malignant increases when the tumour occurs in testes retained within the abdominal cavity (Hohsteter *et al.*, 2014). The potential for metastasis is low as only 10% of cases show metastasis (Svara *et al.*, 2014). A recent study revealed that the invasion of neoplastic cells in lymphatic vessels and blood is found in 40.8% of all SCT.

A 9-year-old male Labrador dog weighing around 30 kgs was presented to Madras Veterinary College Teaching Hospital, small animal outpatient unit for evaluation and treatment with a complaint of alopecia, hyperpigmentation with asymmetrical alopecia, cryptorchid testicle, preputial sagging, enlarged nipples and reduced sex libido as reported by the owner. Since, the pet was monorchid with absence of the contralateral testicle at the Para penile or at the inguinal region, abdominal palpation was performed which revealed soft fluctuating painless mass at the caudal abdomen. Survey lateral radiographs were taken to rule out any abnormality that revealed a smooth contoured homogenous mass at the caudal abdominal region cranial to the bladder. Additionally, ultrasonography was performed to rule out the nature of the mass. Ultrasonographic guided biopsy was performed to rule out the nature of the cells in which Sertoli cells were observed that aided in the confirmatory diagnosis. An additional thoracic radiographs and ultrasound were performed to rule out metastasis if any and general organ health. Routine hematobiochemical profiles were taken to rule out any abnormalities. Hematobiochemical analysis revealed anaemia, thrombocytopaenia, shift to left neutrophilia, altered calcium phosphorous ratio, increase in the ALP levels. Based on the history, physical examination, hematology, histopathological findings intra-abdominal sertoli cell tumour was diagnosed. An additional hormonal assay was performed to test the level of oestradiol which revealed an marginal increase. Hence, laparotomy was recommended for excision of the sertoli cell tumour to which the client consented and presented the dog on the scheduled date.

Alopecia and Hyperpigmentation

Intra- abdominal sertoli cell tumor

DOI 10.5455/ijlr.20200105053502

The pet was premedicated with Butorphanol and Diazepam at the dose rate of 0.25 and 0.1mg/kg body weight intravenously. The animal was induced anaesthesia with propofol at the dose rate of 4 mg/kg intravenous and anaesthesia was maintained with isoflurane with oxygen as a carrier gas under rebreathing circuit. After surgical preparation of the pet, caudal midventral celiotomy was performed and the intra-abdominal mass (Sertoli cell Tumour) was exteriorised and the vascular and the avascular cord was ligated with PGA 1 and was resected, following excision the abdominal cavity was examined for any adhesions.

Sertoli Cell Tumor and Atrophied Contra Lateral Testicle

Reduction in Alopecia and hhperpigmentation - after 1 month

The abdominal cavity was lavaged with normal saline and the celiotomy wound was apposed as per the standard protocol. The atrophied intra scrotal testicle was removed following which scrotal ablation was performed. Post-operative antibiotic with cefuroxime and analgesic tramadol at the standard dose rate were prescribed respectively for 7 days. Alternate day dressings were performed and the sutures were removed on day 14. The pet was reviewed after a month which revealed reduction in alopecia, absence of hyperpigmentation and normal appetite. The pet had an uneventful recovery. Testicular tumours involving Sertoli cell and germinal c ells occur l ess frequently in comparison to interstitial cell tumours and are encountered rarely in extra-testicular sites (Doxsee *et al.,* 2009). It may cause feminizing syndrome in 25 to 60% of the dogs and is characterized by non-prurutic, symmetrical alopecia, hyperpigmentation, gynaecomastia, galactorrhoea, pendulous pr epuce, attractiveness to other males and standing in a female posture to micturate. Feminization occurs more frequently when the tumour is localized in the abdomen (Scott *et al.,* 1995). It is the only testicular tumour that commonly produces hormonal changes with clinical effects (Kumar *et al.,* 2011). The present communication deals with histologic and electron microscopic features in a case of Sertoli cell tumour in a dog.

Testicular tumours involving sertoli cell and germinal cells occur less frequently in comparison to interstitial cell tumours and are encountered rarely in extra-testicular sites (Doxsee *et al.* 2009). It may cause feminizing syndrome in 25 to 60% of the dogs and is characterized by non-prurutic, symmetrical

 DOI 10.5455/ijlr.20200105053502

alopecia, hyperpigmentation, gynaecomastia, galactorrhoea, pendulous prepuce, attractiveness to other males and standing in a female posture to micturate. Feminization occurs more frequently when the tumour is localized in the abdomen (Scott *et al.*, 1995). It is the only testicular tumour that commonly produces hormonal changes with clinical effects (Kumar *et al*., 2011). The incidence of TT is on the rise in humans and similar trend has been reported in dogs (Bray *et al.*, 2006; Townsend *et al.*, 2010). The etiology of TT is not clear but the risk factors include increasing age, breed environmental elements, and cryptorchidism (Quartuccio *et al.*, 2012). In cryptorchid dogs, tumours more frequently develop in the right testicle; probably due to the fact that the right testicle is more likely to be retained (Liao *et al.*, 2009). Sertoli cell tumours, interstitial cell tumours and seminomas are the three common TT in dogs and are mostly diagnosed in geriatric dogs with average age of ten years (Liao *et al.*, 2009; Crivellenti *et al.*, 2013). Association between cryptorchidism and the development of sertoli cell tumours and seminomas but not interstitial cell tumours has been reported (Liao *et al.*, 2009; Masand *et al.*,2013). Dogs with inguinal cryptorchidism have higher risk of TT development than the ones with abdominal cryptorchidism (Liao *et al.*, 2009).

References

1. Bray F, Richiardi L, Ekbom A, Forman D, Pukkala E, Cuninkova M, Moller H. Do testicular seminoma and nonseminoma share the same etiology? Evidence from an age period- cohort analysis of incidence trends in eight European countries. *Cancer Epidemiology Biomarkers and Prevention.* 2006; 15:652.
2. Crivellenti LZ, Motheo TF, Salomao RL, Honsho DK, Momo C. Intrascrotal testicular torsion and Seminoma in a dog with chronic renal failure. *Turkish Journal of Veterinary and Animal Sciences. 2013; 37:113–116.*
3. D'Angelo AR, Vita S, Marruchella G, Di Francesco G. Canine testicular tumours: a retrospective investigation in Abruzoo and Molise, Italy. *Veterinaria Italiana*. 2012; 48:335–339.
4. Hohsteter M, Artukovic B, Severin K, Kurilj AG, Beck A, Sostaric-Zuckermann IC, Grabarevic Z. Canine Testicular tumours: Two types of seminomas can be differentiated by immunohistochemistry. *BMC Veterinary Research.* 2014; 10:1–9.
5. Lawrence JA, Saba CF. Tumours of the male Reproductive system. In: Withrow and MacEwen's Small Animal Clinical Oncology. 5th Edn., Elsevier Saunders, USA. 2013; p. 557–571.
6. Liao AT, Chu PY, Yeh LS, Lin CT, Liu CH. A 12year retrospective study of canine testicular tumours. *Theriogenology*. 2009; 71:919.
7. MacLachlan NJ, Kennedy PC. Tumours of the Genital systems. In: Tumours in Domestic Animals. 4th Edn., Iowa Sate Press. 2002; p. 547–574.
8. Masand A, Kumar N, Patial V. Unilateral diffuse spermatocytic seminoma in a dog. *Veterinary Research International*. 2013; 1(2):46–48.
9. Nodtvedt A, Gamlem H, Gunnes G, Grotmol T, Inderbo A, Moe L. Breed differences in the proportional morbidity of testicular tumours and distribution of histopathologic types in a population based canine cancer registry. *Veterinary Comparative Oncology*. 2011; 9:45–54.
10. North S, Banks T, Straw R. Tumours of the urogenital tract. In: Small Animal Oncology, an introduction. Elsevier Saunders, USA. 2009; p. 151–172.
11. Prasad VD, Prasad BC, Krishna NVVH, Sreenu M. Sertoli Cell Tumour in Dogs. *Indian Veterinary Journal.* 2012; 89(11):91–92.

 DOI 10.5455/ijlr.20200105053502

12. Quartuccio M, Marino G, Garufi G, Cristarella S, Zanghì A. Sertoli cell tumours associated with feminizing syndrome and spermatic cord torsion in two cryptorchid dogs. *Journal of Veterinary Science*. 2012; 13(2):207–209.
13. Sivasudharsan L, Devarathan J, Mahesh R, Kamalalar G, Rambabu K, Sumiran N, Sailaja N. Sertoli cell tumour in a dog: A case Report. *Indian Journal of Canine Practice*. 2017; 9(1):75–77.
14. Svara T, Gombac M, Pogorevc E, Plavec T, Zrimsek P, Pogaenik M. A retrospective study of canine testicular tumours in Slovenia. *Slovenian Veterinary Research*. 2014; 51:81–88.
15. Townsend JS, Richardson LC, German RR. Incidence of testicular cancer in the United States, 1999-2004. *American Journal of Mens Health*. 2010; 4:353.

DOI 10.5455/ijlr.20200105053502