SHORT COMMUNICATION

Surgical Management of Sertoli Cell Tumour in Dogs: Report of Two Cases

Nilesh R. Padaliya*, Jignesh V. Vadalia, Shivaji H. Talekar, Raghuvir H. Bhatt, Amit. R. Bhadaniya, Vinay A. Kalaria

Abstract

Two non-descript male dogs were presented with history of sizable swelling in inguinal region which was gradually increased within a period of three months. Clinical examinations revealed difficulty in walking and presence of fluctuating, painful, hard mass in the scrotum. Under general anaesthesia using ketamine-diazepam induction and isoflurane maintenance, the mass was resected after giving direct incision over it and transfixing the vasculatures followed by routine wound closure. Postoperatively, antibiotic and analgesic drugs were given along with local dressing for five days. Both animals recovered uneventfully without any post-operative complications. Histopathological investigation confirmed presence of sertoli cell tumour in both cases.

Key words: Male dog, Sertoli cell tumour, Surgical intervention, Testes.

Ind J Vet Sci and Biotech (2023): 10.48165/ijvsbt.19.2.20

Introduction

Testicular tumour develops from a disordered uncontrolled growth of cells within the testicles. Testicular tumours like sertoli cell tumour and seminoma are commonly seen in uncastrated or cryptorchid male dogs (Thilagar *et al*., 2002). Sertoli cell tumour (SCT) is slow growing, non-invasive with low malignancy in nature, but chances increase in testes which are retained in the abdominal cavity (Hohsteter *et al*., 2014). Testicular tumours are considered as one of the most common tumours in older intact male dogs. The overall incidence in dogs is very high because most of dogs are not castrated (neutered) at a young age in this area. Testicular tumours produce excessive hormones such as estrogen or testosterone. Sertoli cell tumours have a higher rate of spread than other testicular tumours. Dogs affected with these tumours show swelling of the testicular or scrotal area.

Testicular tumours are histologically classified into sex cord-stromal tumours, mixed germ cell-sex cord stromal tumours and germ cell tumours (D'Angelo *et al*., 2012). Sertoli cell tumours and Leydig cell tumours are sex cord-stromal tumours and seminomas are germ cell tumours (Yumusak *et al*., 2014). Cryptorchidism is an important risk factor for the development of testicular tumour, especially sertoli cell tumours as compared to seminomas (Sivasudharsan *et al.,* 2017). This communication reports successful surgical management of sertoli cell tumour in two dogs.

Material and Methods

Clinical History and Diagnosis

Two non-descript male dogs were presented with history of sizable swelling in inguinal region which was gradually increased within a period of three months (Fig. 1 & 2). Alopecia and pendulous prepuce were typically seen in both the dogs with feminization. The vital parameters like temperature, pulse, respiration were in normal range. Clinical examination revealed difficulty in walking, and there was presence of fluctuating, painful, hard mass in the scrotum, suggesting testicular tumour.

Surgical Treatment

Dogs were kept off feed and off water for 24 h and 12 h, respectively. In both dogs, premedication was carried out with atropine sulphate @ 0.04 mg/kg b. wt. S/C. The combination of ketamine @ 10 mg/kg, diazepam @ 0.5 mg/kg b. wt. was used intravenously for induction of anaesthesia, while isoflurane @ 1.5 to 3.0 % was used for the maintenance of anaesthesia. After preparation of site for asepsis, an incision was given on the tumour mass followed by blunt dissection of inner tissue. After incising tunica vaginalis, testicles were brought out to expose spermatic cord and its surrounding

Department of Veterinary Surgery and Radiology, College of Veterinary Science and Animal Husbandry, Kamdhenu University, Junagadh-362001, India

Corresponding Author: Nilesh R. Padaliya, Department of Veterinary Surgery and Radiology, College of Veterinary Science and Animal Husbandry, Kamdhenu University, Junagadh-362001, India, e-mail: drnrpadaliya@yahoo.in

How to cite this article: Padaliya, N. R., Vadalia, J. V., Talekar, S. H., Bhatt, R. H., Bhadaniya , A. R., & Kalaria, V. A. (2023). Surgical Management of Sertoli Cell Tumour in Dogs: Report of Two Cases. Ind J Vet Sci and Biotech. 19(2), 101-103.

Source of support: Nil

Conflict of interest: None

Submitted: 16/11/2022 **Accepted:** 23/01/2023 **Published:** 10/03/2023

structures. All vascular supplies were ligated using vicryl no. 1 followed by resection of both testicles. Inguinal canal was closed with continuous sutures, while rest of the wound was closed by routine manner (Fig. 3 & 4). Postoperatively, antibiotic and anti-inflammatory drugs were given for five days along with daily dressing. Sutures were removed on 12th post-operative day.

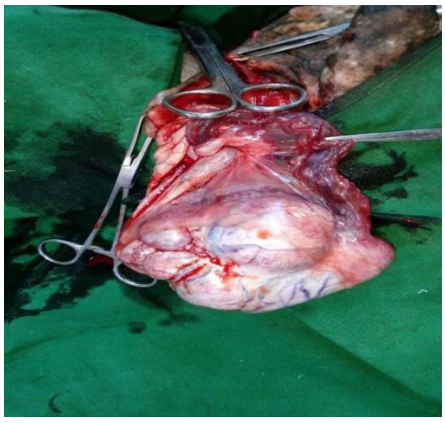
Results and Discussion

The most common testicular tumours of the dogs are seminomas, sertoli cell tumours and interstitial cell tumours. The age of both dogs under study with alopecia, feminization and pendulous prepuce with some of the paraneoplastic syndromes associated with sertoli cell tumours, which may be due to excessive production of estrogen. Diagnosis and surgical management of sertoli cell tumours were also reported by earlier workers (Banga *et al*., 2009; Kishani *et al*., 2017; Sivasudharsan *et al*., 2017). Etiology of testicular tumour is not clear but predisposing factors include old age, breed, environmental elements and cryptorchidism (Prasad *et al.,* 2012; Kishani *et al*., 2017). In cryptorchid dogs, tumours are more frequently developed in the right testicle; because it is more likely to be retained. In present study, however, there was no cryptorchidism, but increase in testicular size, alopecia and feminization like symptoms were noted. Both cases were recovered successfully after surgery. Increased testicular volume was the primary clinical sign observed and the frequency of cryptorchid dogs affected was relatively low in earlier report of Nascimento *et al*. (2020).

Sometime metastatic malignancy also occurs in different parts of the body like abdominal cavity, mesenteric, periaortic lymph nodes, liver, lungs, kidneys, spleen and adrenal glands (Banga *et al*., 2009; Svara *et al*., 2014). Sivasudharsan *et al*. (2017) also reported sertoli cell tumour in Mongrel dog, which was managed by surgical removal of affected testis. Histopathological examination of resected testes of both the dogs revealed sertoli cell tumour, which may be responsible for alopecia and feminization-like syndrome (Fig. 5 & 6). In these cases, surgical excision of tumours was found effective for management of sertoli cell tumour.

It general early surgical removal of testes can reduce the chances of development of a sertoli cell tumour. In the present study, there was no cryptorchidism in any case; however, a tumour was developed, and after surgical removal, alopecia and feminization-like syndrome disappeared over a period of time in both cases of benign sertoli cell tumour.

Fig. 1 & 2: Preoperative image of dogs with inguinal swelling



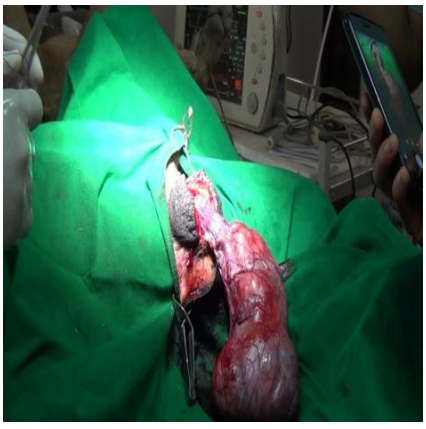
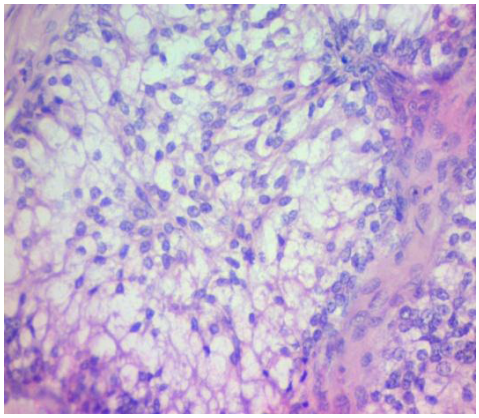


Fig. 3 & 4: Removal of affected testes after ligation of spermatic cord



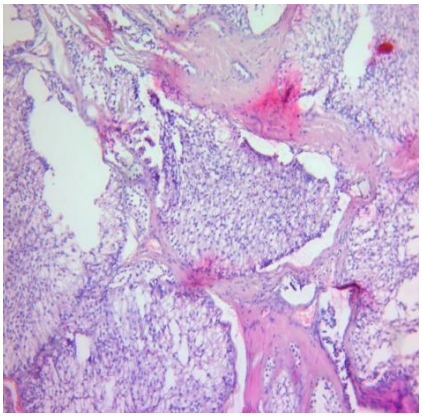


Fig. 5 & 6: Histopathological examination confirmed Sertoli cell tumour in both cases

Acknowledgements

Thanks to the Director of Research, Kamdhenu University (KU), Gujarat and Dean, College of Veterinary Science and Animal Husbandry, Junagadh for providing required facilities for this study.

References

Banga, H.S., Deshmukh, S., Brar, R.S., Chavhan, S.G., & Gadhave, P.D. (2009). Malignant sertoli cell tumour in dog - A case report. *Indian Journal of Veterinary Pathology, 33*(2), 229-231.

D'Angelo, A.R, Vita, S., Marruchella, G., & Di Francesco, G. (2012). Canine testicular tumours: A retrospective investigation in Abruzoo and Molise, Italy. *Veterinaria Italalina, 48*, 335-339.

Nascimento, H.H.L., Santos, A., Prante, A.L., Lamego, E.C., Tondo, L.A.S., Flores, M.M., Fighera, R.A., & Kommers, G.D. (2020). Testicular tumors in 190 dogs: Clinical, macroscopic and histopathological aspects. *Brazilian Journal of Veterinary Research, 40*(7), 525-535.

Hohsteter, M., Artukovic, B., Severin, K., Kurilj, A. G., & Beck, A. (2014). Canine testicular tumors: Two types of seminomas can be differentiated by immunohistochemistry. *BMC Veterinary Research, 10*, 1-9.

Kishani, A.I., Wachida, N., Apaa, T.T., Ahur, Victor Masekave, V.M., Grema, B.A., Tughgba, T., Adamu, S, S., & Rabo, J.S. (2017). Sertoli cell tumor in a cryptorchid dog. *Journal of Advanced Veterinary and Animal Research, 4*(4), 394-398.

Prasad, V.D., Prasad, B.C., Krishna, N., & Sreenu, M. (2012). Sertoli cell tumor in dogs. *Indian Veterinary Journal, 89*(11), 91-92.

Sivasudharsan, L., Devarathan, J., Mahesh, R., Kamalalar, G., Rambabu, K., Sumiran N., & Sailaja, N. (2017). Sertoli cell tumor in a dog: A case report. *Indian Journal of Canine Practice, 9*(1), 75-77.

Svara, T., Gombac, M., Pogorevc, E., Plavec, T., Zrimsek, P., & Pogacnik, M. (2014). A retrospective study of canine testicular tumors in Slovenia. *Slovenian Veterinary Research, 51,* 81-88.

Thilagar, S., Balachandran, C., Murlimanohar B. M., & Kumaresan, A. (2002). Co-existence of sertoli cell tumour and seminoma in a dog. *Indian Veterinary Journal, 79,* 1190-1191.

Yumusak, N., Caliskan, M., & Kutsal, O. (2014). Bilaterally diffuse malignant seminoma in a dog. *Ankara University Veterinary Fakalty. Derg, 61,* 151-152.