

**MALIGNANT SEMINOMA IN A CRYPTORCHID LABRADOR RETREIVER DOG- A CASE REPORT**PRIYANKA\*, R.N. CHAUDHARY and B.L. JANGIR<sup>1</sup>Department of Veterinary Surgery and Radiology, <sup>1</sup>Department of Veterinary Pathology, College of Veterinary Sciences, Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar-125004, Haryana, India

Received: 06.11.2021; Accepted: 14.01.2022

**SUMMARY**

A 10 years old intact male Labrador retriever was presented with history of anorexia, enlarged abdomen and weight loss since few weeks. On physical examination, the dog was found bilateral cryptorchid and whole abdomen was firm and painful on palpation. Abdominal radiographs and ultrasonography suggested soft tissue mass in the caudoventral abdomen. Based on clinical examination, a presumptive diagnosis of primary testicular neoplasia was made. Exploratory laparotomy was performed. There were systemic metastases to major blood vessels, iliac lymph node and mesentery; so complete resection was not possible. Considering regional metastasis and grave prognosis, thereafter the dog was euthanized. A huge testicular tumour mass weighing approximately two kgs was retrieved. Histopathological examination revealed malignant seminoma.

**Keywords:** Dog, Cryptorchid, Malignant seminoma**How to cite:** Priyanka, Chaudhary, R.N. and Jangir, B.L. (2022). Malignant seminoma in a cryptorchid labrador retriever dog- A case report. *Haryana Vet.* 61(2): 299-301.

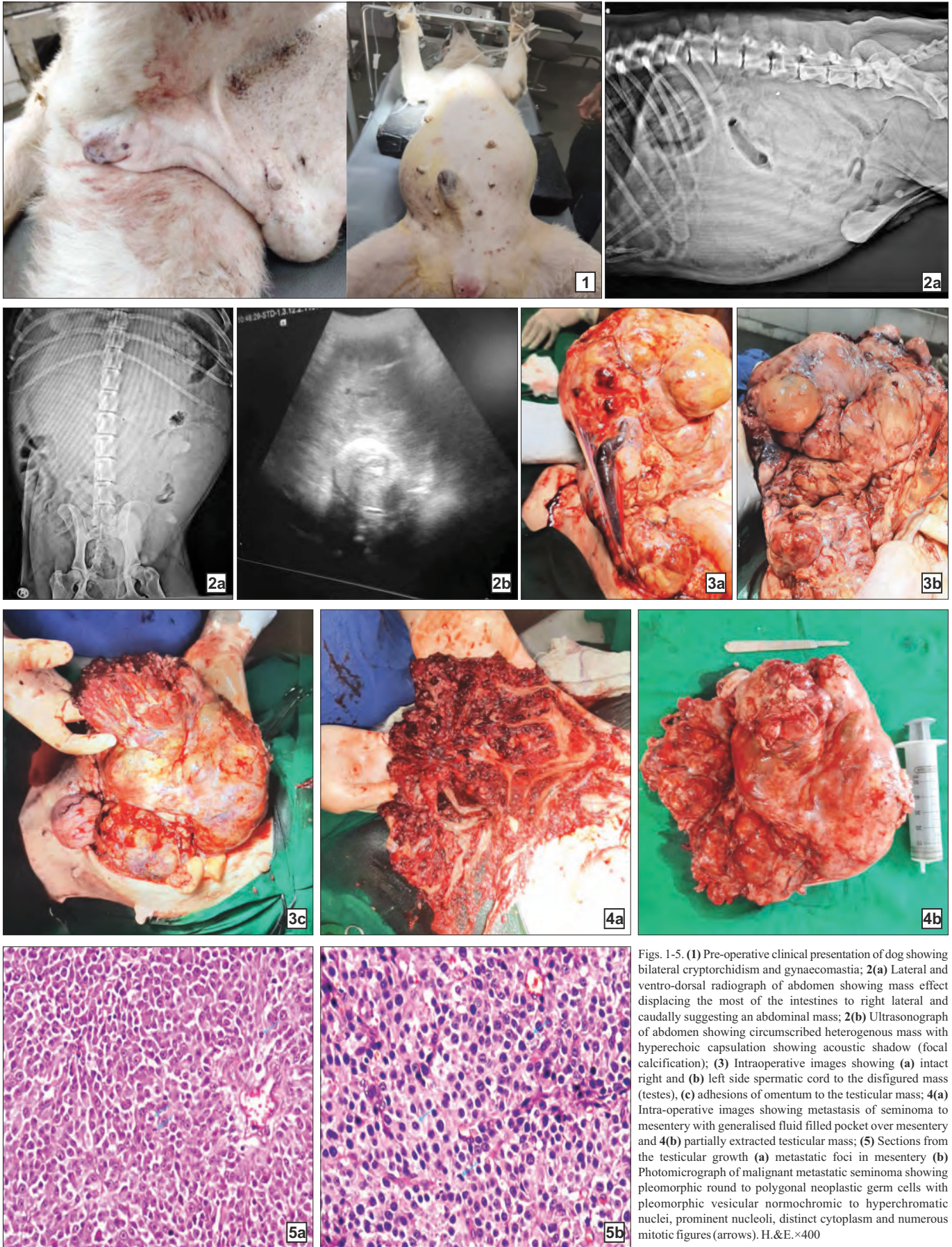
Testicular neoplasm is the prevailing and third most frequent tumour after skin and fibrous tissue tumours in male dogs (Hayes and Pendergrass, 1976). Seminoma and Sertoli cell tumours are the most common testicular tumours identified in older dogs followed by interstitial cell tumours. Many predisposing factors that may influence the development of testicular tumors are age, breed, cryptorchidism and environmental carcinogens (Liao *et al.*, 2009). Cryptorchid testes are more likely to develop a tumour as compared to scrotal testes (Ortega-Pacheco *et al.*, 2006). Cryptorchid dogs older than 10 years of age have high risk of developing tumours than younger dogs under 6 years of age (Reif *et al.*, 1979). Boxer, German shepherd, Afghan Hound, and Shetland sheepdog are some of the few breeds that are more susceptible to develop testicular tumours. Canine seminoma is mostly benign and its metastasis has rarely been reported (Foster and Ladds, 2007). Sufficient reports are available for scrotal testicular malignant seminoma in dogs whereas, there is scarcity of reports on cryptorchid testicular malignant seminoma with metastases in dogs (Dugat *et al.*, 2015).

A 10 years old intact male Labrador Retriever was reported with a history of anorexia, enlarged abdomen and gradual weight loss since few weeks. On clinical examination, the dog was dull, dyspnoeic with pain on palpating the firm abdomen. It showed cryptorchidism since birth (Fig.1); so, both the testicles were first searched subcutaneously for its inguinal location, but was not found in the inguinal canal. All the teats were enlarged and showed the signs of gynaecomastia (Fig.1). Abdominal

radiographs revealed poor serosal details in cranio-ventral abdomen with soft tissue opacity in left lateral and mid abdomen (mass effect) displacing the most of the intestines to right lateral and caudally suggesting an abnormal abdominal mass (Fig. 2a). Ultrasonography of abdomen revealed multiple anechoic pockets in mid abdomen, few circumscribed heterogenous masses with hyperechoic capsulation showing acoustic shadow (focal calcification) (Fig. 2b) dorsal to liver and near kidneys. All these diagnostic imaging techniques and clinical examination findings favoured the presumptive diagnosis of intra-abdominal retained bilateral testicles. Surgical intervention was planned accordingly for removal of the mass.

Dog was administered Ringer's lactate and analgesic meloxicam i/v to relieve pain. After stabilising the patient, Atropine @ 0.04 mg/kg b.wt. and butorphanol @ 0.2 mg/kg b.wt. were administered i/m followed by induction with propofol @ 4 mg/kg b.wt. slow i/v and maintenance using isoflurane. Exploratory midline laparotomy was performed and a huge disfigured mass comprising of both spermatic cords was identified (Figs. 3a & 3b) which was fused to form a single mass. Generalised small fluid filled pockets were observed on the entire mesentery (Fig. 4a). Further exploration revealed metastatic involvement of iliac lymph nodes, major blood vessels, liver and peritoneum. The mass was adhered to the omentum (Fig. 3c) and major blood vessels. A complete resection of the mass was not possible so, mass was partially resected which weighed approximately 2 kilograms (Fig. 4b). Prognosis was explained to the owner and with his consent the dog was euthanized. Samples were submitted for histopathological examination. The

\*Corresponding author: priyankaduggal48@gmail.com



Figs. 1-5. (1) Pre-operative clinical presentation of dog showing bilateral cryptorchidism and gynecomastia; 2(a) Lateral and ventro-dorsal radiograph of abdomen showing mass effect displacing the most of the intestines to right lateral and caudally suggesting an abdominal mass; 2(b) Ultrasonograph of abdomen showing circumscribed heterogenous mass with hyperechoic capsulation showing acoustic shadow (focal calcification); (3) Intraoperative images showing (a) intact right and (b) left side spermatic cord to the disfigured mass (testes), (c) adhesions of omentum to the testicular mass; 4(a) Intra-operative images showing metastasis of seminoma to mesentery with generalised fluid filled pocket over mesentery and 4(b) partially extracted testicular mass; (5) Sections from the testicular growth (a) metastatic foci in mesentery (b) Photomicrograph of malignant metastatic seminoma showing pleomorphic round to polygonal neoplastic germ cells with pleomorphic vesicular normochromic to hyperchromatic nuclei, prominent nucleoli, distinct cytoplasm and numerous mitotic figures (arrows). H.&E.×400



sections of testicular growth revealed malignant seminoma characterized by pleomorphic, round to polygonal neoplastic germ cells with distinct cytoplasm, pleomorphic vesicular normochromic to hyperchromatic nuclei, prominent nucleoli and numerous mitotic figures indicative of malignant seminoma (Fig. 5a). Sections of growths from mesentery also revealed similar histopathological findings (Fig. 5b).

Testicular tumours are the most common tumours affecting the genitals of older male dogs. The most common types of testicular tumours in dogs are Sertoli cell tumours and seminomas which probably occur with approximately equal frequency, whereas interstitial cell tumours have relatively very low prevalence (Grieco *et al.*, 2008). Seminoma is mostly benign in nature with low malignancy rate (Foster and Ladds, 2007). Systemic metastasis of malignant seminoma is reported in sub-lumbar lymph nodes (MacLachlan and Kennedy, 2002), skin, scrotum, eyes, liver, kidney, peritoneum (Takiguchi *et al.*, 2001), Metastasis to omentum, liver, blood vessels and mesenteric lymph nodes has been reported in the present case. Among many predisposing factors, cryptorchidism has been reported as a definitive risk factor for testicular tumour (Ortega-Pacheco *et al.*, 2006), cryptorchid testes are 14.3 times more likely to develop testicular tumour than scrotal testes. Old age and bilateral cryptorchidism in this dog have been supposed to be the contributing risk factors for testicular tumour in the present case. Intra-operative euthanasia was opted in present case due to metastases and grave prognosis. In conclusion, cryptorchidism and older age are definitive

risk factors for tumorigenesis. Early detection and treatment of predisposing factor like cryptorchidism should be done to avoid its tumorigenesis.

## REFERENCES

- Dugat, D.R., Medici, E.L., Rochat, M.C., Arble, J.A. and Snider, T.A. (2015). An unusual case of metastatic seminoma in a dog. *J. Am. Anim. Hosp. Assoc.* **51(6)**: 401-406.
- Foster, R.A. and Ladds, P.W. (2007). Male genital system. In Jubb, Kennedy, and Palmer's pathology of Domestic Animals, Vol. 3, (5<sup>th</sup> Edn.), Grant Maxie M. (Edt.) Philadelphia. *Elsevier Saunders*. pp. 565-619.
- Grieco, V., Riccardi, E., Greppi, G.F., Teruzzi, F., Iermano, V. and Finazzi, M. (2008). Canine testicular tumours: a study on 232 dogs. *J. Comparat. Pathol.* **138(2-3)**: 86-89.
- Hayes Jr, H.M. and Pendergrass, T.W. (1976). Canine testicular tumors: epidemiologic features of 410 dogs. *Intern. J. Cancer.* **18(4)**: 482-487.
- Liao, A.T., Chu, P.Y., Yeh, L.S., Lin, C.T. and Liu, C.H. (2009). A 12-year retrospective study of canine testicular tumors. *J. Vet. Med. Sci.* **71(7)**: 919-923.
- MacLachlan, N.J. and Kennedy, P.C. (2002). Tumors of the genital systems. In: Tumors in Domestic Animals, (4<sup>th</sup> Edn.), D.J. Meuten (Edt), Iowa State Press, Ames. pp. 561-567.
- Ortega-Pacheco, A., Rodriguez-Buenfil, J.C., Segura-Correa, J.C., Bolio-Gonzalez, M.E., Jimenez-Coello, M. and Linde Forsberg, C. (2006). Pathological conditions of the reproductive organs of male stray dogs in the tropics: prevalence, risk factors, morphological findings and testosterone concentrations. *Reprod. Domest. Anim.* **41**: 429-437.
- Reif, J.S., Maguire, T.G., Kenney, R.M. and Brodey, R.S. (1979). A cohort study of canine testicular neoplasia. *J. Am. Vet. Med. Assoc.* **175**: 719-723.
- Takiguchi, M., Iida, T., Kudo, T. And Hashimoto, A. (2001). Malignant seminoma with systemic metastases in a dog. *J. Small Anim. Pract.* **42(7)**: 360-362.

## THE HARYANA VETERINARIAN

Editors/Editorial Board Members are highly thankful to all the distinguished referees who helped us in the evaluation of articles. We request them to continue to extend their co-operation and be prompt in future to give their valuable comments on the articles for timely publication of the journal.