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## Bilateral leydigoma of testicles in a Labrador dog

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**Abstract**

A six years old male Labrador dog was presented to Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal for treatment with the history of gradual enlargement of both testes for the past seven months. Clinical examination of the dog revealed the presence of hard palpable masses on both testes. Surgically both the testes were removed under standard anesthetic protocol. The testicles were preserved in 10% formalin and sent to Department of veterinary pathology for histopathological examination. The cut section of both formalinized testes revealed round, well developed tumour with yellowish brown parenchyma. Histomorphology of left testicular showed diffuse arrangement of cuboidal to polyhedral cells with lipid vacuoles and the right testicular mass exhibited cluster of cells surrounding empty spaces with abundant fibrocollagenous stroma. The case was confirmed as bilateral involvement of testicles with leydigoma.

**Keywords:** Dog, testes, bilateral and leydigoma

**Introduction**

Testicular tumors arise from germ cells and sex-cord stromal elements of the testis [1]. These tumours commonly occurred in household animals and its frequency is higher in dogs. The dogs have the highest incidence of these tumours of all animal species, particularly among old dogs [2]. It is the third most common type of canine tumor after skin and fibrous tissue tumors [3]. The Leydigoma or Leydig cell tumor (LCT) is a benign tumor made up from the cells that release the testosterone hormone in the connective tissue of the testicles. It was the most common histologic type of testicular tumour followed by seminoma and sertoli cell tumour [4]. The dog affected with interstitial tumour usually exhibits the symptoms like blood in the urine, enlarged scrotum, infertility, torsion of spermatic cord, swelling of one or both testicles and some growth or tumour in testicles. The present paper deals about the successful surgical removal of Leydig cell tumour (Leydigoma) present in both testicles of a six years old Labrador dog.

**Materials and Methods**

A six years old male Labrador dog was presented to Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal for treatment with the history of gradual enlargement of both testes for the past seven months. Clinical examination of the animal and physical examination of testes were carried out. Fine needle aspiration biopsy (FNAB) was performed to collect the samples for cytology and radiography was taken to assess the metastasis.

Based on the clinical examination, gross appearance and cytology, it was tentatively diagnosed as testicular tumour and decided to perform total scrotal ablations. Blood and serum samples were collected for pre-operative assessment. Surgery was carried out by using atropine-xylozine as premedication, induction with ketamin and maintenance with isoflurone. Post-operative care was given with oral antibiotics, analgesics and wound dressing.

The removed testicular masses were weighed and preserved in 10% formalin for histopathological examination. The tissue samples were processed by paraffin embedding technique and 4µ thick tissue sections were stained by routine haematoxylin and eosin [5].

**Results**

Clinically, the animal was dull, difficult in walking and abduction of hind limbs. On physical examination, both testes revealed hard masses with fistulated tract in the scrotum.

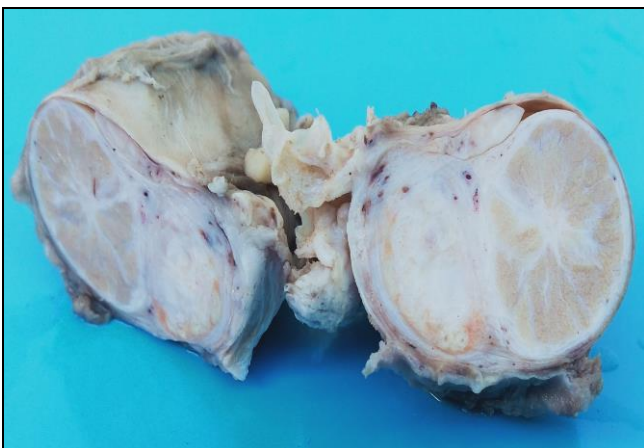
Radiographic examination of thorax revealed no metastatic evidence in the lungs. The haemato-biochemical parameters were within the normal range. The testicles were removed surgically under general anaesthetic protocol

Grossly, the formalinized sample showed sausage shape growth on the left testis and large round globular mass on the right testis (Fig. 1). The removed left and right testis weighed about 390 g and 320 g respectively. The cut surface of both testicular masses exhibited light yellowish brown colour encapsulated mass (Fig. 2). The cut section of the left testicular tumour mass measured about 3.5 cm and right one was 3 cm in diameter.

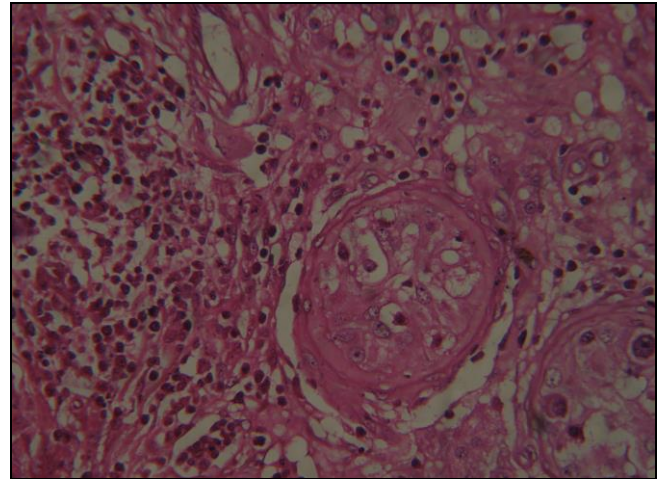
Histopathologically, both testicular masses showed proliferation of interstitial cells in the interstitial space and atrophied seminiferous tubules (Fig. 3) which contained only supporting cells of Sertoli without spermatogonia and sperm. Diffuse arrangement of polyhedral to cuboidal interstitial cells with small to large vacuolar spaces containing lipid (Fig. 4) were noticed in left testicular tumour. Whereas, right testicular mass showed cluster of cells surrounding empty spaces and the stroma supporting the neoplastic cells revealed abundant dense fibrocollagenous tissue. In some places the proliferating neoplastic cells form pseudo-adenomatous pattern and papillary projections into the lumen. The nuclei of the interstitial cells were small, hyperchromatic, round to oval nuclei without mitotic figures.



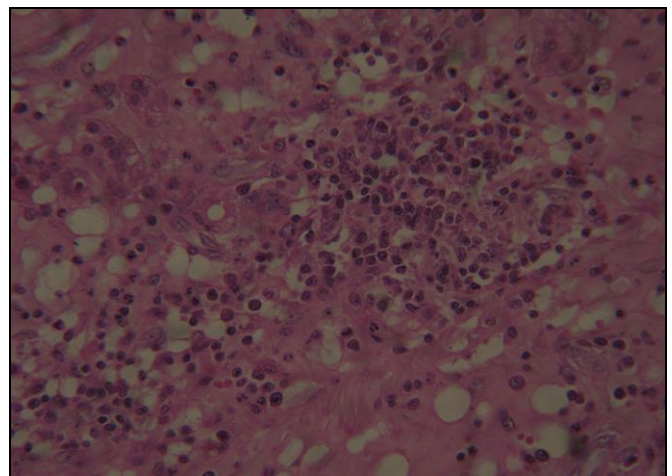
**Fig 1:** Left testis showing sausage shaped growth and right testis showing globular shape



**Fig 2:** Cross section of the left testis (Formalinized) containing leydigoma



**Fig 3:** Proliferation of interstitial cells in the interstitial space with atrophied seminiferous tubules (H&E, 400)



**Fig 4:** Diffuse arrangement of polyhedral interstitial cells with more cytoplasm and numerous lipid vacuoles (H&E, 400)

### Discussion

Leydigoma is a small benign growth that can develop on the testis of intact male dogs due to proliferation of Leydig cells. Cryptorchidism and lack of spermatogenesis plays an important role in the development of testicular tumour in dogs [6]. Retained testes in the abdominal cavity may be predisposing cause for the development of mixed germ cell and sex cord stromal tumours [7]. But in the present case, the testes were located in the scrotal sac itself and similar type of scrotal interstitial tumour was also reported by Ciaputa *et al.* [8].

It is commonly noticed in old dogs and difficult to identify at early stages as this tumourgenesis appear slowly than the other canine tumours. The affected dog was normal without any clinical signs as the Leydigoma did not cause feminization or cryptorchidism [9]. Dogs with Leydig cell tumour had a greater concentration of estradiol in venous blood and testosterone concentration is lower in testicular venous blood [10].

There was no recurrence reported after three months of surgery. Based on the histopathological features and clinical findings, the testicular tumour of the dog was diagnosed as Leydigoma.

### Acknowledgements

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