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Clinical Article

MANAGEMENT OF A RARE DERMATOLOGICAL ISSUE ASSOCIATED WITH SEMINOMA IN A GERMAN SHEPHERD DOG

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SUMMARY

A rare dermatological issue resulting from seminoma in an eight-year-old German Shepherd dog is described in this report, including details of its surgical intervention.

Keywords: Dog, Testis, Tumour, Seminoma, Dermatological problem

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Testicular tumors were once common in household animals, primarily in dogs (Peters *et al.*, 2001). Among male dogs, testicular tumors are the most common genital neoplasms, with Leydig cell tumors, seminomas and Sertoli cell tumors being prevalent. Seminoma, a mostly benign type of testicular tumor, originates from the germinal epithelium of the testicular seminiferous tubules. Cryptorchidism is a significant risk factor, leading to a 15-fold increase in seminoma incidence (Hayes *et al.*, 1985). Seminomas are generally non-endocrinologically active (Peter *et al.*, 2001), but in some cases, they may trigger the development of feminine traits and skin issues in male dogs. Most dogs with seminomas exhibit no symptoms and these tumors are often discovered during routine physical exams. Certain dog breeds, such as Boxers, German Shepherds, Afghan Hounds, Weimaraners, Shetland Sheepdogs, Collies and Maltese, may have a predisposition to testicular tumors.

An 8-year-old intact male German Shepherd dog was presented with a dermatological issue at the Dermatology Unit of the Madras Veterinary College Teaching Hospital. Despite extended treatment, the dog showed no response. As a result, the case was referred to the Small Animal Theriogenology unit due to monorchidism (Fig. 1).

The physical examination of the dog indicated unilateral right-side cryptorchidism, displaying a mass in the ventral abdomen and linear erythema in the preputial region. No feminization symptoms were observed. Subsequent ultrasonography revealed an undescended right testicle with a tumor located in the abdominal region.

Haematology and biochemistry tests unveiled mild anaemia and thrombocytopenia. X-rays of the thorax and abdominal region showed no signs of metastasis. The animal underwent castration under general anaesthesia and the testicle with a tumor (measuring 9 × 8 × 8 cm) was surgically excised (Fig. 3). Examination of the specimen upon slicing revealed a sizable, well-defined tumor, exhibiting focal areas of necrosis. The tumor displayed a pale tan to pale yellow coloration throughout the entire testis. Following the surgery, the linear erythema gradually faded over a two-month period (Fig. 4).

The microscopic examination of the seminoma mass revealed predominantly sheet-like arrangements within extensively expanded tubules, nests and focal trabeculae, showing 3 to 4 mitoses per 10 high-power fields along with areas of necrosis (Fig. 5). Notably, a robust lymphocytic response was observed. The individual tumor cells appeared uniformly large, displaying distinct cytoplasmic borders, amphophilic cytoplasm and large vesicular central nuclei featuring prominent eosinophilic macronuclei. Noteworthy was the absence of foam and giant cells. The epididymis was devoid of tumor. However, the right testis exhibited a pagetoid spread with no normal testicular tissue identified. The spermatic cord and pampiniform plexus were normal and clear of any tumor involvement.

Seminoma, an embryonal tumor originating from primary genital cells, is a common soft testicular tumor in older dogs around 10 years of age. It's associated with inguinal cryptorchidism, where the temperature is higher than in the scrotum but lower than in the abdominal cavity, potentially predisposing dogs to develop seminomas (Hemminki *et al.*, 2004). These tumors can appear unilaterally or bilaterally, tend to occur more on the right testis, and vary in size. Enlargement of the testis can occur as the tumor grows (Meuten, 2002 and Taniyama *et al.*, 2001), often showing a homogeneous, grey or creamy

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Fig. 1. Cryptorchid testicle with linear erythema; **Fig. 2.** Ultrasound examination of cryptorchid testicle

Fig. 3. Cryptorchid testis with tumor; **Fig. 4.** Suppression of linear erythema after cryptorchid surgery

appearance when observed in cross-section. Larger tumors may display areas of coagulative necrosis without hemorrhages.

Older cryptorchid dogs, especially over 6 years old, have a higher risk of developing testicular cancer, similar to older dogs in general. In one rare case, a dog presented with dermatological markers (linear erythema) due to myelosuppression, which gradually reduced following castration. This case might be a rare instance of seminoma associated with hyperestrogenemia and alopecia.

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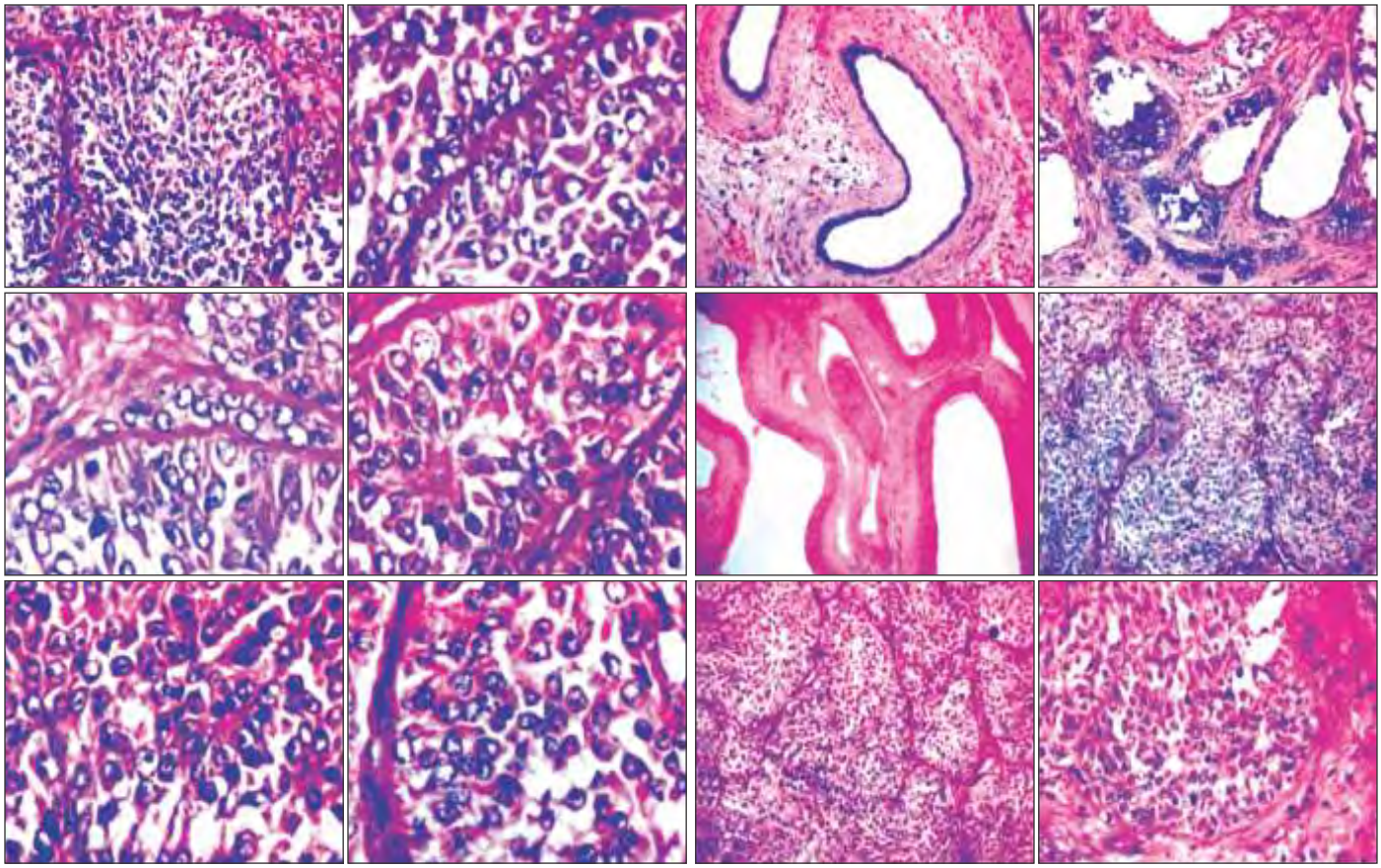

Fig. 5. (A-L) Photomicrographs showing seminoma in older dogs.

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RETRACTION OF ARTICLE

This article earlier available at https://www.luvas.edu.in/haryana-veterinarian/download/harvet2016-dec/1.pdf entitled *"Occurrence of some organochlorine pesticide residues in poultry feed and meat"* has been retracted by the authors because of some error made during the data analysis process of the experimental observations due to counting the number of samples showing the concentration of pesticide below its corresponding Limit of Detection. All authors take full responsibility for this mistake and sincerely apologize for any inconvenience it may cause.

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