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Inguinal seminoma in dogs: A review of three cases

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Abstract

Three intact male dogs (Spitz, Non-descript and Doberman) age around eight to nine years old were presented with the history of alopecia and progressive swelling of the right inguinal region since five months. Physical examination revealed all the vital parameter were within the normal range. The owner also reported that all dogs had unilateral cryptorchid on its right side since birth. Palpation revealed presence of one testis in the scrotal sac and masses were in the inguinal region. The mass was gray in colour and firm in consistency. No pain was evinced on palpation. The mammary gland and the nipple were enlarged and generalized skin and hair deformities were observed. Surgical correction was resorted to under general anaesthesia and the mass was resected en-block with orchietomy. On histopathological examination, the mass was confirmed as seminoma. All the animal had an uneventful recovery.

Keywords: Cryptorchid, dog, seminoma

Introduction

Testicular tumors are the most common neoplasms of the genital system in male dogs and are the third most common type of canine tumor after skin and fibrous tissue tumors (Nødtvedt, *et al.*, 2011) [6]. It is the most common primary neoplasm which rarely metastasize, when they do metastasis they spread to the spermatic cord (Takiguchi and Kudo, 2008) [8] characterized by testicular enlargement either unilateral or bilateral and obviously in intact males to form an intra testicular mass. Canine seminomas are around, 1mm to 10cm in diameter and pale cream in colour or grey (Grieco, *et al.*, 2007) [2]. The present paper discusses the surgical management of inguinal seminoma in dogs.

Case history and observations

Three intact male dogs (Spitz, Non-descript and Doberman) age 8, 8.5 and 9 years old weighing 9 kg, 13.5 kg and 32 kg were presented Veterinary University Peripheral Hospital, Madhavaram Milk Colony with the history of alopecia and progressive swelling of the right inguinal region since five months. The owner also reported that all dogs had unilateral cryptorchid on its right side since birth. Physical examination revealed all the vital parameter were within the normal range. Palpation revealed the presence of one testis in the scrotal sac and a mass of around 5 cm in diameter in Doberman, 4 cm in both non-descriptive and spitz, were found at the inguinal region. The masses were gray in colour and firm in consistency. The testicle was grossly enlarged and the animals did not evince pain on palpation. The mammary gland and the nipple were elongated and enlarged and generalized skin and hair deformities were observed. Routine haematological and blood biochemical examination revealed normal values. Survey radiograph of the thorax revealed no pulmonary metastasis. Surgical correction was resorted too.

Treatment and Discussion

Surgical site was aseptically prepared. Preoperatively cefotaxime and meloxicam were administered @ 20 mg/kg BW and 0.2 mg/kg BW intravenously respectively. The dog was premedicated with atropine sulphate @ 0.04 mg/kg BW intramuscularly followed by xylazine hydrochloride @ 1 mg/kg BW intramuscularly. General anaesthesia was induced with an anaesthetic mixture containing 100 mg of ketamine hydrochloride and 2.5 mg of diazepam @ 5mg/kg BW of ketamine hydrochloride and 0.125 mg/kg BW of diazepam intravenously. The anaesthesia was maintained with $\frac{1}{3}$ to $\frac{1}{2}$ of induction dose of above mixture intermittently as and when required. Right paramedian incision was made directly on the swelling and the mass containing testicles were exposed, ligation of spermatic cord was done using PGA No.1. The contra lateral testicle was removed through the pre-scrotal incision (Fig. 1).

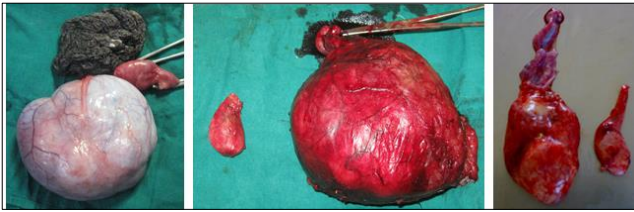


Fig 1: Dog-Testis-Seminoma-Firm gray white coloured nodule

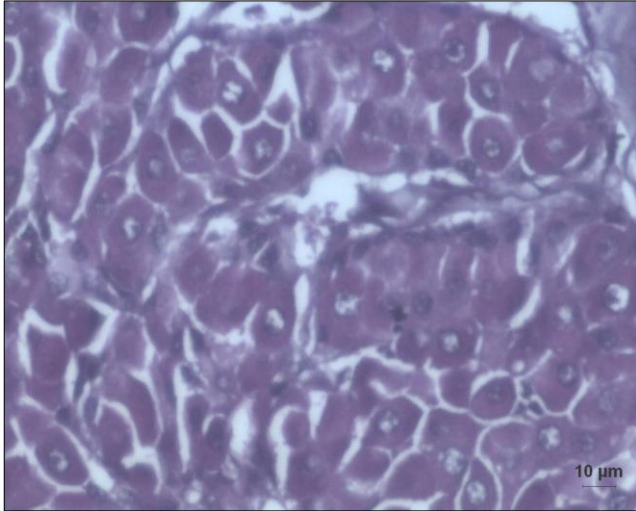


Fig 2: Dog-Testis-Seminoma-Intratubular pattern with polyhedral cell and contained large round to oval vesicular nuclei Scale Bar H&E 10 μ m

In case 1 and 2 the mass was around half football sized grey in colour and lobulated but in case 3 the mass was around lemon sized and grey in colour without lobulation. The muscles were sutured with PGA No.1-0 and the skin was sutured with silk thread. The excised mass was collected in 10% neutral buffered formalin. The paraffin embedded tissue sections were cut into 4 to 6 μ m thickness and stained with haematoxylin and eosin stain. Post-operatively antibiotics and analgesics were administered and wound dressings were done on every alternate day. Skin sutures were removed on 10th post-operative day.

The mass was grayish in appearance. Microscopic examination of the mass revealed intratubular pattern of growth and the neoplastic cells were polyhedral with abundant eosinophilic cytoplasm and contained large round to oval vesicular nucleus (Fig. 2). Nucleus contained one or two prominent nucleoli and mitotic figures were also seen. Based on the gross and histopathological examination, the resected mass was confirmed as seminoma (Grieco *et al.*, 2007) [2].

Seminomas are the common tumour of the testes (42%) that are unilateral or bilateral, which are likely to develop in male dogs that have one or both the testicles not descended from the body cavity (Johnston *et al.*, 2001) [5]. The tumour was non-metastatic evident through thoracic and abdomen radiographs. Unilateral cryptorchid, is the most consistent factor for the development of seminoma in dogs (Yates *et al.*, 2003) [9]. In our study all dogs were affected were right unilateral inguinal cryptorchidism, Reuter (2005) [7] reported that the increase frequency of manifestation in testicular tumours is cryptorchidism. Most commonly, cryptorchidism is manifested unilaterally and the right testis used to be stopped in descent more frequently than the left one. If cryptorchidism affects only one testis, it may be accompanied by development of a tumour in the other, normally located

testis. Abdominal cryptorchidism predisposes to the development of sertolioma since the temperature higher than that in the scrotal sac results in wasting of most cells except of Sertoli cells. In cases of inguinal cryptorchidism, the temperature is higher than that in the scrotal sac but lower than that in abdominal cavity, which, according to several authors, predisposes to the development of seminomas (Chaganti and Houldsworth, 2000) [1]. Seminoma without signs of hyperestrogenism has an excellent prognosis. All the animal had an uneventful recovery after surgery and no clinical symptom of alopecia was seen during the later part of the life (Jayaprakash *et al.*, 2009) [4].

Conclusion

Surgical management of inguinal seminoma in dogs were recorded and reported.

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