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Surgical management of unilateral Sertoli cell tumour in a Pomeranian dog

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Abstract

Sertoli cell tumors are a widespread type of testicular tumor that mostly affect dogs. A two year old male Pomeranian presented with a history of swelling on the right side of the ventral abdomen at Department of Veterinary Surgery and Radiology. The clinical examination reveals painless firm mass hanging out at right ventral abdomen with size of tennis ball, presence of only one testicle in the scrotal sac. After surgery, a histopathological analysis revealed that the tumor was a sertoli cell tumor.

Keywords: Cryptorchidism, sertoli cell tumor, dog, surgical management

Introduction

One of the most prevalent congenital conditions in dogs is called cryptorchidism, which is characterized by the inability of either or both of the testicles to descend into the scrotum within the first eight weeks of birth. It's an autosomal recessive characteristic that's sex-limited. (Bufalari *et al.*, 2015) [2]. Testicular tumors comprise more than 10% of all canine tumors in males, and their incidence is significantly higher in dogs with cryptorchid testes. (Arthur, 2001) [1]. Most frequently, cryptorchidism affects stallions, boars, and certain dog breeds, including Boxers, Pomeranians, Dachshunds, Sealyhams, and Cairn Terriers. (Noakes *et al.*, 2009) [6]. Unilateral cryptorchidism is more common in cryptorchid canines, with a prevalence of 1-7%. (Noakes *et al.*, 2009 and Sridevi, 2015) [6, 9]. It is typical for canines and stallions to have this condition, which is followed by neoplasia. (Noakes *et al.*, 2009) [6].

Testicular tumour was one of the most commonly occurring genital neoplasms in dogs and it had increased incidence rate for the past 40 years (Hohsteter *et al.*, 2014) [4]. Among domestic animals, almost 90% of the testicular tumour of was reported in dogs. Seminoma, Leydig cell tumor, and Sertoli cell tumor were the three most prevalent testicular tumors reported in dogs. (Santos *et al.*, 2000) [8]. Because two distinct types of testicular tumors can exist in the same testis, they are occasionally categorized as mixed tumors. (MacLachlan and Kennedy, 2002) [5]. Histologically, primary testicular tumors can be divided into three categories: germ cell tumors, mixed germ cell-sex cord stromal tumors, and sex cord-stromal (Gonadal stromal) tumors. (D'Angelo *et al.*, 2012) [3]. Seminomas (SEM) are germ cell tumors, whereas Sertoli cell tumors (SCT) and Leydig cell tumors (LCT) are sex cord-stromal malignancies. (Nødtvedt *et al.*, 2011 and Yumuşak *et al.*, 2014) [7, 10].

Case history and observations

A two year old male Pomeranian presented with history of swelling over ventral aspects of right abdomen at Department of Veterinary Surgery and Radiology. The clinical examination reveals painless firm mass hanging out at right ventral abdomen with size of tennis ball, presence of only one testicle in the scrotal sac. On clinical examination it was reveals the tumors mass and planned for surgery. The physiological values are within usual range. Hence the animal was fit for anaesthesia and surgery was fixed for tumor excision.

Treatment and Discussion

The dog was fasted for 24 hours and Surgical site was prepared aseptically after shaving and scrubbing. The dog was premedicated with inj. xyazine @ 1.0.mg/kg body weight and general anesthesia was induced by administration of combination of ketamine @ 5 mg/kg body weight and diazepam @ 0.5 mg/kg body weight. The dog was restrained in supine position. The linear incision approximately 4 cm in length was made over the swelling (Fig. 1). The subcutaneous tissue was incised and adhesions were removed manually. The swollen mass was taken out from incision (Fig. 2) and spermatic cord was doubly ligated with chromic catgut no. 2.0 (Fig. 3) and excised it (Fig. 4). The subcutaneous tissue and skin were sutured in routine manner. Tincture benzoin seal was applied over the suture line. The excised mass sent for Histopathological examination for confirmatory diagnosis. Following surgery, the dog had intravenous treatment for five days at a dose of 25 mg/kg bodyweight of ceftriaxone (Intacef, 500 mg injection, Intas Pharmaceuticals Ltd.) and 0.2 mg/kg bodyweight of meloxicam (Melonex BP, 5 mg, Intas Pharmaceuticals Ltd.). On the 12th postoperative day, skin sutures were removed. The dog recovered without any complications. A highly packed tumor consisting of polygonal cells grouped in well-formed tubules (intratubular pattern) was identified as the testicular tumor by histopathology of the part of the enlarged testes that had been excised. H & E 50 X (Fig. 5). Neoplastic cells feature round to oval nuclei with coarsely stippled chromatin, ambiguous cell boundaries, and a modest quantity of eosinophilic to transparent cytoplasm. Frequently neoplastic palisade perpendicular to the basement membrane of tubules. H & E 200 X (Fig. 6).



Fig 1: Incision made direct on swelling



Fig 2: Exteriorize of testicle



Fig 3: Spermatic cord ligation



Fig 4: Excised testicle

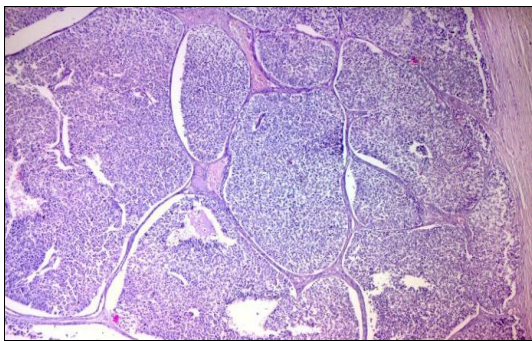


Fig 5: Neoplasm made up of tubules with well-formed polygonal cells

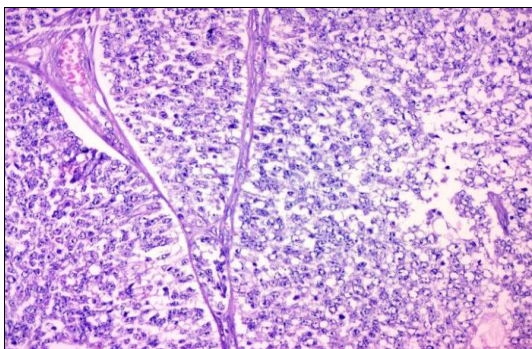


Fig 6: A modest quantity of eosinophilic to transparent cytoplasm, an oval or round nucleus with coarsely stippled chromatin, and ambiguous cell boundaries are characteristics of neoplastic cells

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Summary

The majority of testicular tumors in dogs are Sertoli cell tumors. In this report, the case of a two-year-old male Pomeranian dog with the swelling over ventral aspects of right abdomen, there is a unilaterally enlarged right testis and a normal left testis. The dog was subjected for surgical excision. It was diagnosed as a case of seminoma by the enlarged testis' histopathology.

Conclusion

The Sertoli cell tumor in dog can be successfully managed by surgical removal of affected testicle.

Acknowledgement

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