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Management of Sertoli cell tumour associated with feminizing syndrome in a Cryptorchid dog

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Abstract

A 12-year-old male dog was presented to State Institute of Animal Health, Tanuku, with history of bilateral alopecia on ventral abdomen and on the dorsal surface of abdomen along with a large swelling near the inguinal region. Upon physical examination of the animal it was found that it is cryptorchid (condition in which testes do not descend into the scrotal sac at time of birth and scrotal sac is completely absent). On palpation of the mass, it was found that left testes greatly enlarged and right one normal. It was diagnosed as a case of Sertoli cell tumour based on the haematological, radiological and histopathological results. The only treatment for this case is the surgical correction and hence proceeded with castration. One month post-surgery, the dog has developed hair and normal urination posture achieved and size of the nipples became normal. No medication has been used, only by surgical procedure normal health status has been achieved.

Keywords: Testicular tumours, sertoli cell tumour, cryptorchid, castration, feminizing tumour, atrophy

Introduction

Testicular tumours are considered one of the most common tumours in older intact male dogs. But overall incidence is not very high because most dogs are castrated at a young age. Most commonly seen tumours in male dogs are Sertoli cell tumour, Leydig cell tumour and Seminomas. Other types of tumours are also present but occur very rarely and the cause of growth of tumour is unknown. Incidence of tumours in older dogs is greater than in younger ones. Male dogs with one/both testicles that haven't descended from abdominal cavity are much likely to develop a tumour than with normal testes. It has been reported that cryptorchid environment predisposes to neoplasms (Klaas Post and Suran H. Kilborn *et al.*, 1987)^[1] and more than 70% tumours in cryptorchids are sertoli cell tumours and remaining are seminomas. Sertoli cell tumours are malignant and show metastasis to other testicular structures and nearby lymph nodes (Vegad and Madhuswamy *et al.*, 2010)^[5]. This develops from the supporting cells of the seminiferous tubules and is also known as adenocarcinoma. MacLachlan and Kennedy (2002)^[2] divided Sertoli cell tumours into intratubular and diffuse infiltrative forms on the basis of their histological appearance, the diffuse type more likely to be malignant, whereas the intratubular form is usually benign.

History and Diagnosis

A 12-year-old male dog was presented to the hospital with a history of bilateral alopecia on either surfaces of abdomen and swelling near the inguinal region. Animal had been active and feeding normally, upon physical examination and palpation of the mass, it was found that the dog is a cryptorchid since birth and the mass is hard, firm and it is confirmed as testes. Right side testes were small, showing no signs of enlargement. Owner reported that the dog is urinating in the squat position like that of female and they found that size of nipples had been enlarged. There is no pain while urinating. Clinical examination revealed that rectal temperature was 100.5°F, mucous membrane was pale pink and popliteal lymph nodes were slightly enlarged. Haematology revealed that haemoglobin value was 13.4g/dl, white blood cell count has been elevated (28,000 cells/cu.mm) while the ESR, RBC count, eosinophil count, platelet count were normal as shown in Table 1 below.

Discussion

The radiograph and histopathology of the tissue was also carried out as represented in Figure 2 below. It revealed the asymmetry of both the testicles within the abdomen. It also revealed that there was no metastasis of the tumour into the other organs.

Left testes were greatly enlarged and right testes showed decreased size than the regular once. It was confirmed as testicular tumour and proceeded for surgical removal (castration) of the both testes. The histopathology of the tumour tissue as shown in Figure 1, revealed shrunken tubules with conspicuous lumen. Cells were multilayered, arranged along with long axis perpendicular to basement membranes of tubules. Cells are fusiform in shape with cytoplasmic prolongations without distinct borders. Nuclei were narrow and cytoplasmic vacuoles are evident. The cells in the centre of tubules were detached forming solid mass confirming the Sertoli cell tumour. Surgical removal of testes was the only treatment of choice in this condition. Chemotherapy in this case prevents only the occurrence of metastasis but cannot cure the primary cause.

Table 1: Showing the Blood biochemical profile

Test name	Result	Normal range
Haemoglobin	13.4 g/dl	12-18 g/dl
WBC count	29,800 cells/cu.mm	4,000-11,000 cells/cu.mm
ESR	39mm/1 st hr.	0-10 mm/1 st hr.
RBC count	7.2million/cu.mm	3.0-5.0 million/cu.mm
Eosinophil count	60 cells/cu.mm	40-440 cells/cu.mm
Platelet count	4.3 lakhs/cu.mm	1.5-4.0 lakhs/cu.mm
Blood sugar	64 mg/dl	70-140 mg/dl
Blood urea	39 mg/dl	15-45 mg/dl
S. creatinine	1.3 mg/dl	0.6-1.5 mg/dl
S. bilirubin	0.4 mg/dl	0.2-1.0 mg/dl
S.G.O.T	35 IU/L	UPTO 60 IU/L
S.G.P.T	39 IU/L	UPTO 60 IU/L

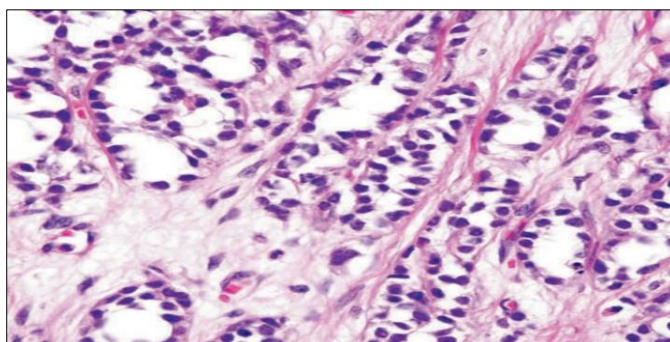


Fig 1: Histopathology of tumour

Pre anesthetic preparation

Atropine @ 0.02 to 0.04 mg/kg was administered subcutaneously, xylazine @ 1 mg/kg intramuscularly. The animal was given general anaesthesia propofol @ 2 mg/kg intravenously for every 6 minutes. Surgical site was prepared aseptically by clipping, shaving and scrubbing with anti-septic solution. The patient was positioned in dorsal recumbency with rear limbs gently abducted.

Surgical procedure

1. Incision was made directly on the skin over the swelling at the inguinal area; clear the blood with the help of mops.
2. After skin and subcutaneous tissue incisions, blunt dissection was used to expose and free the tumour mass from the underlying tissue.
3. The incision continued through the spermatic fascia to exteriorize the testicle
4. The parietal vaginal tunic over the testicle incised, a

hemostat was placed across vaginal tunic where it attaches to the epididymis.

5. The ligament of the tail of epididymis was separated from the tunic while applying traction with the hemostat on the tunic.
6. The vascular cord and ductus deferens of spermatic cord were individually ligated using absorbable suture material CAT GUT, Size- 1-0).
7. A hemostat was placed across the cord near the testicle and both the ductus deferens and vascular cord were transected between the hemostat and ligatures.
8. The cord had been inspected for hemorrhage and replaced within the tunic. The cremaster muscle and tunic were encircled with ligature and the same procedure repeated for the second testicle.
9. Occlusion of the dead space using the continuous sutures using absorbable material (poly glycolic acid, size- 1-0).
10. Subcutaneous tissue had been closed using the absorbable suture material (poly glycolic acid, size- 1-0).
11. Skin was apposed with intradermal sutures using absorbable material (poly glycolic acid, size- 1-0).

Result

The figure 2 as shown above is the result of castration. The left testicle weight 128 gms with dimensions of 14 (length) and 8(width) cms, while the right testicle was found to be atrophied.

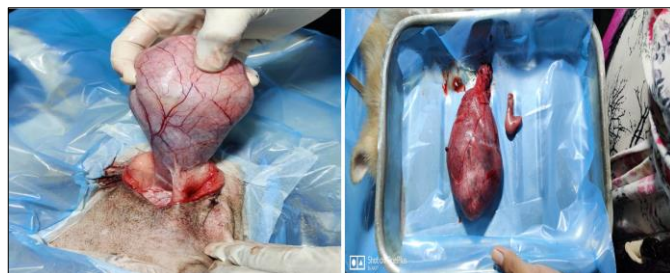


Fig 2: Showing the castrated testicle

Post-surgical treatment

Tab. Deep TBR – Daily 2 tabs. For one week. It enhances the tissue development process. Tab. Cephavet @ 30mg/kg was advised daily for 5 days, to prevent secondary bacterial infections. Regular dressing of the surgical site using povidone iodine solution followed by Dressol spray. It was also advised E-collar for full day except while feeding till complete healing of the sutures. When visited for suture removal, the sutures healed perfectly without any infection. Normal hair growth was observed and the animal recovered from alopecia. The dog exhibited normal urination posture (Hiking of the hind limb while urinating).

Conclusion

About one in every eight older male dogs suffer from testicular tumours. The best way to prevent the occurrence is to neuter the dog at younger age or at the end of their breeding age. If metastasis doesn't occur the chances of recovery are very high. Normal hair growth is evident within a month or two. Prognosis is very good for testicular tumours after surgical removal of testes.

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