A CASE OF CANINE TESTICULAR SERTOLI CELL TUMOR

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This case report concerns a Sertoli cell tumor in the left testis of a dog.

History A 7-year-old Shepherd male dog born on 28 June 1954 was well until late 1960. In February 1961 the owner of the dog noticed a swelling in the scrotum about the size of a hen's egg. One month later, the scrotum had enlarged to approximately the size of an adult man's head. The patient was brought to our clinic on 5 June 1961 and bilateral castration was performed on 10 June 1961, but, the dog hemorrhaged severely and expired during the operation.

Macroscopic findings The left testis and epididymis were enlarged, measuring 20×14×9 cm (fig. 1). Palpation of the testis and epididymis disclosed coarse lobulation and partial fluctuation (fig. 2). Many cysts of various sizes were observed on the cut surface of the testis and epididymis. These cysts contained dark or red-brown serous fluid. The peripheral areas of the testis were comparatively hard, but the central portion was soft. Some areas of the testis had much vascular and fibrous tissue. In general, the inner surfaces of the cyst walls were smooth, but some granular and papillary tissues extended into the cavity (fig. 3).

The right testis and epididymis were small and highly atrophic, measuring 6.5×3.8×1.8 cm. The testicular tissue was soft and dark-brown (fig. 4).

Microscopic findings In histological sections prepared from the left testis and stained with hematoxylin-eosin, there were many seminiferous tubule-like cyst with dilated cavities in the peripheral zone of the testis. Most of the cyst walls were composed of thick layers of spindle-shaped cells which radiated towards the center of the cavity. The histological features of these cells somewhat resembled those of Sertoli cells in normal seminiferous tubules. Some of them were very large and mitotic. Inside of the layers of the spindle-shaped cells, there were masses of necrotic or desquamated cells. There were no germinal cells in the seminiferous tubules. In some areas, the tubules were very dilated and empty. Slight edema, proliferation of the connective tissue and cellular infiltration with neutrophil leukocytes were observed in the interstitial tissue. Slight thickening of the basal membrane of the seminiferous tubules was generally observed. In the central portion of the left testis, there was wide centripetal necrosis (figs. 5~7).

A diagnosis of Sertoli cell tumor of the testis was made from these histological findings.

In the left ductus deferens, there were occasional tumor cell emboli.

In the right testis, most of the seminiferous tubules were degenerated and severely

atrophic. Vacuolation and a decrease in the thickness of the seminiferous epithelium, a slight increase in the number of Sertoli cells, and arrested spermatogenesis with only a few or one layer of spermatogonia inside of the basal membrane were observed (fig. 8). In the interstitial tissue, cells with lipochrome pigments were noticed here and there. The right epididymis was also atrophic, with small empty tubules and flattened epithelia. Proliferation of connective tissue was observed in the interstitium and serosa.

Histological examinations of other organs were not performed, but no metastasis or abnormality was revealed by macroscopic examination.

Discussion

Neoplasms of the testis are fairly common in older dogs[1,3,5,6]. COFFIN et al. resported a Sertoli cell tumor in a 5-year-old mongrel male Spitz which showed characteristic hyperestrinism. BRODEY also described the same kind of tumor in a 10-year-old male Boston Terrier associated with feminized symptoms, and he suggested the possibility of estrogen-secretion from the neoplasm. In the present case, however, there were no clinical symptoms such as mammary hypertrophy, alopecia or obesity which might support the possibility of estrogen-secretion, although no assay of the estrogen level was made.

Metastasis of a canine Sertoli cell tumor to the lumbar lymph nodes has been reported by COFFIN et al. In the present case, there was an early metastatic process to the ductus deferens on the same side as the original testicular tumor. The most prominent clinical characteristic in this case was the very rapid growth of the tumor.

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EXPLANATION OF PLATES

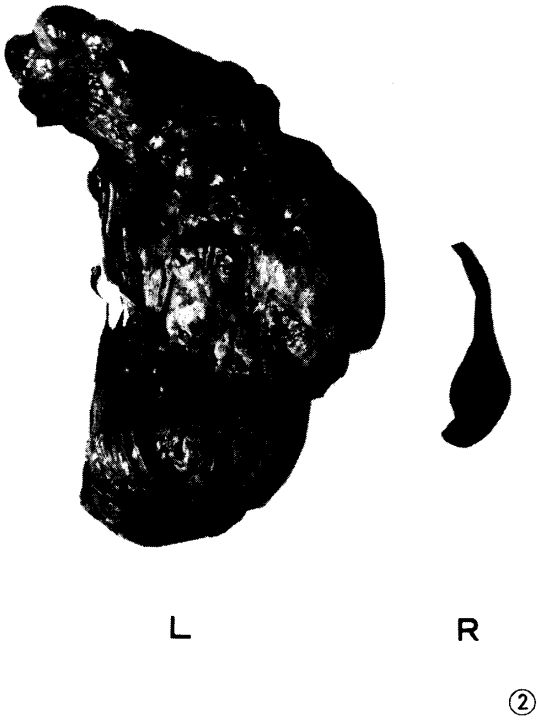
PLATE I

Fig. 1 Lower ventral abdominal region
Note greatly enlarged scrotum

Fig. 2 Lateral view of the left testis with tumor (L) and right atrophied testis (R)

Fig. 3 Cross section of the tumor
Note a number of cysts (scale: cm)

Fig. 4 Cross section of the right atrophied testis (scale: cm)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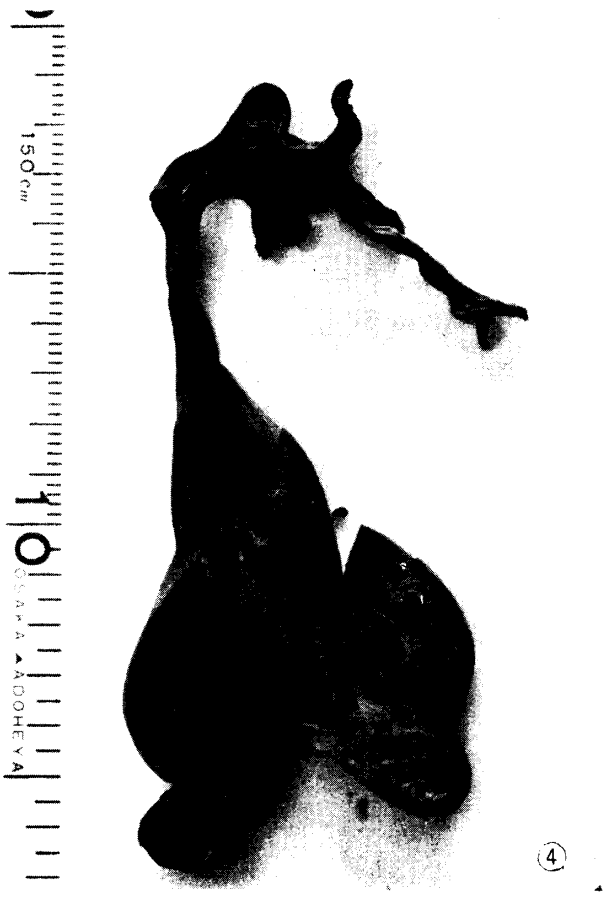


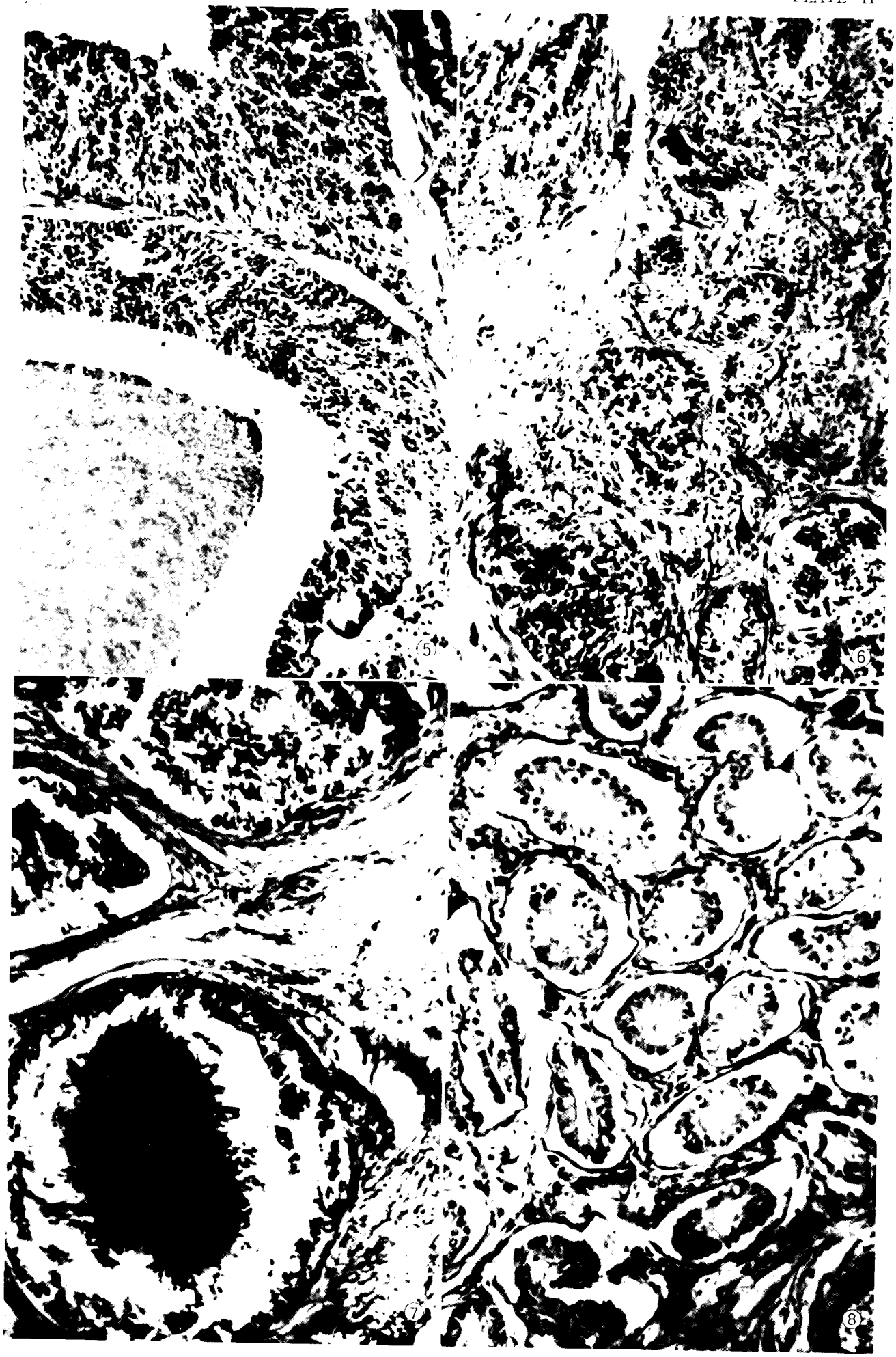
PLATE II

Fig. 5 Portion of a seminiferous tubule-like cyst
Note Sertoli cells × 130

Fig. 6 Approximately central portion of the left testis
Note edema of interstitial tissue and many small cysts containing necrotic cells × 130

Fig. 7 Typical seminiferous tubule-like cysts with masses of necrotic or desquamated cells in the cavities × 130

Fig. 8 Portion of the right testis
Note severely atrophied seminiferous tubules × 130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