

Clinical Quiz

History and symptoms are below. Make a diagnosis. Then turn the page for the correct diagnosis, the treatment, and conclusions.

John Clark, '58

Case History. A unilaterally cryptorchid male English Bulldog, 7½-years old, had shown a decreased libido and some constipation for the past 5 or 6 months. During the last 2 or 3 months the following symptoms developed: 1. bilateral focalized alopecia and hyperpigmentation, 2. mammary enlargement and elongation of the nipples, 3. atrophy of the penis and a pendulous prepuce, 4. a firm mass 12 cm. in diameter could be palpated through the abdominal wall in the anterior pelvic

region, 5. passage of a catheter was found to be very difficult, 6. the right testicle was located anteriorly in the preputial sheath and was abnormally enlarged. The left testicle could not be palpated.

DIAGNOSIS—next page.

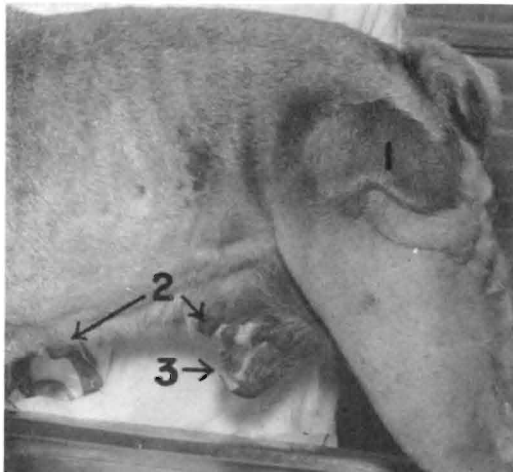


Fig. 1. Note (1) alopecia and hyperpigmentation, (2) enlarged nipples, and (3) pendulous prepuce.



Fig. 2. Marked squamous cell metaplasia occurred in the prostate gland. x150.

Diagnosis. Sertoli cell tumor of the right testis (Fig. 3, 480x) with resultant feminization. Note marked estrogenic squamous metaplasia of the prostate (Fig. 2, 150x). The prostate was the palpable mass in the anterior pelvic region. The constipation was a result of the prostatic enlargement (to the size of a large orange) which resulted in mechanical obstruction of the rectum. Difficulty encountered in the passage of a catheter was due to either hyperplasia of the urethral epithelium or the prostatic enlargement, or both.

Discussion. Sertoli or sustentacular cell tumors are the most important clinically of the three types of testicular neoplasms which occur regularly. Interstitial cell tumors are the most frequent but no characteristic endocrine effects are observed. Seminomas are next in frequency, originating from cells of the spermatogenic series; hormonal disturbances do not occur and clinical disturbances are usually absent in this type.

Sertoli cell tumors when grown to clinically significant size are usually between 100 and 500 cm. and occur with greatest frequency in 9 to 15-year old dogs. Both scrotal and cryptorchid testes may be involved. Occasionally a case may show bilateral tumors, but they are usually unilateral with a high incidence of seminomas of the opposite testicle. The tumor is usually a carcinoma but may be an adenoma, in which case it is smaller in size. The cut section of tumorous tissue is firm, nodular, pale yellow, streaked by interlocking strands of tough gray or white tissue, and sometimes focally softened, finely cystic or red mottled. Extension may be observed into the mesorchium and it may metastasize to the corresponding lumbar lymph nodes and kidney, according to Mulligan.

The clinicopathologic picture is quite dramatic. This is due to the ability of this tumor to elaborate its own estrogens, which produces hyperestrogenism in males (feminization occurs in 30 to 50% of the cases). Clinically, all or part of the following symptoms may be manifested: 1. depression and loss of libido, 2. other males sexually attracted, 3. fat depots

and deposition of fat change to more closely resemble the female, 4. alopecia, focal or generalized, predominantly ventral but nearly always bilateral, 5. increased pigmentation may be manifested in the skin, 6. marked atrophy of the opposite testis, 7. atrophy of the penis, 8. swollen and pendulous prepuce, 9. mammary enlargement, 10. hyperplasia and elongation of nipples, 11. estrogenic squamous cell metaplasia of the prostate which produces enlargement and frequently cystic dilation along with secondary infection of the prostate. Urine alterations may result. Cystoureteropyelonephritis sometimes occurs with secondary uremia.

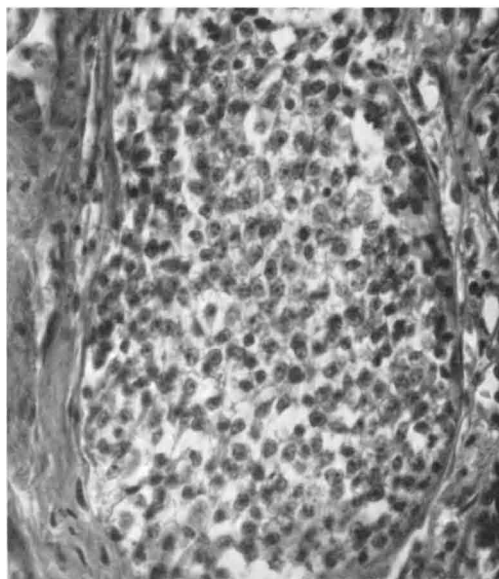


Fig. 3. Sertoli cell tumor of the right testis. x480.

Treatment. The best treatment is surgical removal of the neoplastic testicle. In the great majority of cases there is regression and disappearance of most of the clinicopathologic effects of hyperestrogenism in from 2 to 6 weeks.

In this case, both a bilateral orchidectomy and a prostatectomy were performed. Prostatectomy is not necessary unless the enlargement is resulting in constipation or other pathology of the prostate is present. The right testicle was located anteriorly in the prepuce and was

markedly atrophic. No metastasis was noted.

Due to the advanced age of the English Bulldog involved in this case, the shock and stress resulting from the anesthesia and surgery proved to be too much. Death occurred 24 hours post-surgically without complete recovery from the anesthesia.

Six years of age for an English Bulldog is considered by most authorities to be a full life span; few exceed this.

Summary and Conclusions. Sertoli cell tumors are the most clinically significant of the three types. They occur mostly in older dogs, 9 to 15 years of age. The co-existence of a testicular tumor with feminizing signs is pathognomonic of an estrogen-secreting sertoli cell tumor. The presence of feminization in a cryptorchid indicates a sertoli cell tumor of a retained testicle, whether inguinal or abdominal.

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The hypothesis that the normal growth of cells is controlled by the interaction of two enzyme forces, one which stimulates growth and the other which retards it, was offered.

Hakim, A. A. Biological and enzymic activities of placental extract. *Experimental Medicine and Surgery*. 14:344-353. 1956.

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