

ANOMALIES OF THE MALE DOG

The canine reproductive system is a miracle of nature when you consider the complex events that result in the ability to procreate. Each stage in the development of reproductive capabilities is a chapter worth remembering, beginning with the development of undifferentiated sex organs in the fetus.

The reproductive system should not be taken lightly. Sexual soundness is needed for the survival of the breed. I will briefly describe conditions known to affect male [dogs].

True hermaphroditism (having both male and female reproductive organs) is rare and appears to be breed-related. Affected dogs are usually sterile but should be removed from breeding programs because heritability is strongly suspected. Causes include trauma to the developing reproductive organs in utero, abnormal sex chromosomes or genetic anomalies that disturb the normal biochemical processes of sexual differentiation in the fetus. Chromosomal tests (karyotyping) can reveal the exact nature and extent of the anomaly.

Hypothyroidism is linked to decreased libido, testicular atrophy and reduced spermatogenesis (sperm production). There are a variety of causes of the serious disturbance of the endocrine system. Thyroxine replacement may increase performance and sperm quantity and quality. This quick fix treats symptoms, but heritability is still an underlying cause of the deficiency. Affected dogs should not be bred.

In persistent penile frenulum the penis cannot extend beyond the prepuce (sheath). Affected dogs cannot copulate. Treatment is by surgical removal of the fibrous tissue connecting the prepuce to the penis. Heritability factors are unknown.

THE TESTES AND THEIR DESCENT

A normal dog has two testes that begin descending toward the scrotum shortly after birth. In most cases, they complete their journey through the inguinal ring to settle in the scrotum. The process may be interrupted so one (unilateral) or both (bilateral) testes do not descend. If the testes develop but one or both do not descend, it is a cryptorchid. A monorchid is a dog in which only one testis (that may or may not descend) actually exists within the dog.

Fertility may not be impaired if at least one testis descends. And undescended testis may produce male hormones, but the viability of an affected dog's sperm is impaired by the high internal body temperature.

Cryptorchidism is thought to be a sex-limited autosomal trait with several genes involved. Parents and offspring of a cryptorchid are considered carriers. Remove affected males from the breeding population to reduce the incidence of cryptorchidism.

Neoplasia (tumor growth) of an undescended testis is common. Tumors may occur anywhere in the male reproductive system but most originate in the testes. Testicular tumors are classified by their histologic appearance and occur most frequently at an ectopic (abnormally situated) testis. However, they may occur in fully descended testes.

Increased estrogen produced by a neoplastic testis may result in feminization, alopecia, (hair loss) and enlargement of the prostate. Orchidectomy, the removal of an affected testis, may prevent further problems if the tumor is benign or, if malignant, it has not metastasized.

Blockage of the duct system may be bilateral or unilateral. If both ducts are blocked, the dog will be infertile. Aplasia (failure to develop) of the duct system may be caused by infection or trauma. Heritability factors are unknown.

ANOMALIES OF THE MALE DOG (continued).....

LIBIDO

While not directly a reproductive anomaly, the libido (the drive associated with sexual instinct) affects a dog's ability to generate offspring. Low or nonexistent libido may indicate hypothyroidism, low levels of testosterone or increased production of estrogen by the testes.

Often the problem is psychological and may be remedied by training the dog. We are not always able to evaluate the exact cause of decreased libido, but a reluctance to breed is cause for concern. We are fortunate if we can isolate and correct conditions that lead to this behavior, which may be as simple as a male's reluctance to [environment]. In every case, we should look for the cause of his behavior and decide if he is worth breeding.

This is a cursory review of anomalies that affect the reproductive capabilities in the male dog. [written by Susan Lennard for the St. Bernard column in the AKC Gazette, April '95]