

Margaret V. Root Kustritz, DVM, PhD, Diplomate ACT,
University of Minnesota

Early Gonadectomy in Dogs & Cats

You have asked:

>Are early spay/neuter surgeries
safe in dogs and cats?



Illustration by Bill Celander

The Expert Says . . .

How do we define “early” spay or neuter? The American Veterinary Medical Association (AVMA) defines “early” as 8 to 16 weeks of age. The “traditional” age of spay/neuter surgery in dogs and cats varies, with most veterinarians recommending gonadectomy before the onset of puberty but after completion of all pediatric vaccines and perhaps after attainment of some proportion of adult height, body weight, or muscularity.

This discussion will not address the larger issue of whether we should perform gonadectomies at all; some argue that elective gonadectomy is an unnecessary surgery performed for the owner’s convenience, while others promote the value of gonadectomy as a tool to help control pet overpopulation and to promote animal health.

Gonadectomy is the most common surgery performed in dogs and cats in the United States and is accepted as the standard of practice in this

country. The scientific literature provides no evidence on the optimal age for ovariectomy or castration of dogs or cats. This discussion will review studies evaluating concerns raised by veterinarians about gonadectomy at various ages.

Surgical/Anesthetic Complications

Anesthesia of pediatric animals is complicated by alterations in pediatric physiology, with subsequent variations in pharmacokinetics of anesthetic agents, and by their small size. Numerous reports describe proven anesthetic techniques for pediatric dogs and cats. Pediatric animals should be fasted for a maximum of 4 hours before surgery is performed and should be fed immediately upon recovery from anesthesia. To prevent intraoperative hypothermia, they should be maintained on a circulating warm-water blanket and prepared for sterile surgery with water-based, not alcohol-based, solutions. Surgi-

cal technique is the same as for larger animals. There are no reports of increased major anesthetic or surgical complications in dogs and cats undergoing ovariectomy or castration at less than 24 weeks of age compared with those greater than 24 weeks of age. Morbidity and mortality are the same for both age groups if special attention is paid to anesthetic technique.

Obesity

Retrospective studies document increased body weight and body condition score secondary to gonadectomy at any age in dogs and cats. Metabolic rate may decline after gonadectomy in cats. Increase in indiscriminate appetite has been documented in bitches after gonadectomy. It may well be that hormonal changes secondary to gonadectomy contribute to obesity; owners should be educated on how best to maintain their pet’s body weight with appropriate diet and exercise.

Orthopedic Problems

Estrogen and testosterone are 2 of the stimuli responsible for closure of physes of the long bones. Gonadectomy at any time prior to physal closure delays the process; these animals are statistically taller than their intact counterparts. Concerns expressed include predisposition to anterior cruciate ligament rupture and hip dysplasia, and increased incidence of physal fractures. No evidence at this time links any specific age at gonadectomy with any of these conditions; the only study documenting any effect of age at gonadectomy with hip dysplasia demonstrated a possible increased incidence in bitches spayed before 5.5 months of age but worse disease in those spayed after 5.5 months of age.

Urinary Problems

Despite long-standing concerns in the veterinary community regarding increased incidence of feline lower urinary tract disease in male cats castrated when very young, none of the many studies completed have shown such a connection. In female dogs, urethral sphincter mechanism incompetence (formerly called estrogen-responsive urinary incontinence) is much more common in spayed than in intact animals and has been demonstrated to occur more commonly in bitches spayed before 3 months of age than in those spayed later.

Neoplasia

It has been well documented that incidence of mammary neoplasia, the most common neoplasm of bitches and third most common neoplasm of queens, is greatly decreased in animals that have gonadectomy before puberty. In male dogs, castration is associated with increased incidence of prostatic adenocarcinoma. Some evidence also shows that castration of large- and giant-breed dogs may be associated with increased incidence of osteosarcoma. Practitioners must decide whether the benefits of castration outweigh the detriment of possibly inducing these uncommon but highly malignant cancers.

What Is the Optimal Age for Gonadectomy?

With our current knowledge, there is no one best answer regarding the optimal age for ovariohysterectomy or castration of dogs and cats. Perhaps the controversy is best addressed by the AVMA in its position statement, which was approved by the AVMA House of Delegates in 1994 and most recently revised in 2004. It states, "The AVMA supports the concept of early (prepubertal, 8 to 16 weeks of age) spay/neuter in dogs and cats in an effort to reduce the number of unwanted animals of these species. Just as for other veterinary medical and surgical procedures, veterinarians should use their best medical judgment in deciding at what age spay/neuter should be performed on individual animals." ■

See Aids & Resources, back page, for references, contacts, and appendices.

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