

The Bond and Beyond for VPN December 2008

by Alice Villalobos

Will We Change on Early Spay-Neuter?

Early spay and neuter has become the norm in the USA. Some states are asking voters to pass legislation that would require citizens to have their pets spayed or neutered by puberty. Overpopulation is the driver for requiring pet owners to spay and neuter their pets.

But what if large scale studies found out that the early spay-neuter procedure may actually jeopardize the health of our personal pets? What if we found enough epidemiological evidence that early spay and neutering of pet dogs may in fact open them to orthopedic, behavioral, immunologic and oncologic issues?

Questions about early spay-neuter have been raised by a veterinarian who treats canine athletes. In an opinion article, written by Christine Zink, DVM, Ph.D. DACP, the disadvantages of early versus late spay-neuter are weighed against the advantage when considering performance and health for canine athletes. The opinion article appears on Dr. Zink's web site and is titled, *Early Spay-Neuter Considerations for the Canine Athlete: One Veterinarian's Opinion* © 2005 Chris Zink DVM, PhD, DACVP.

*Go to the URL, <http://www.caninesports.com/SpayNeuter.html> , to review the entire thought provoking article and to look at the specific references. My plan for *The Bond and Beyond* is to ponder Zink's opinion and consider the information that she proposes.*

Zink assembled 18 references to support her opinion article. Some show that dogs spayed or neutered early are taller than dogs spayed at an older age. Zink also cites that sex hormones have a role in bone density. She concludes that the structural and physiological differences in early spayed or neutered dogs may be the reason why veterinarians see a higher incidence of orthopedic disease such as CCL rupture and hip dysplasia than in dogs spayed or neutered after 5 ½ months of age.

For the past 30 years, our profession has urged the public to spay and neuter dogs and cats for a host of beneficial reasons including the population control and the avoidance of breast and testicular cancer. With client education and marketing, our profession has succeeded in making early spay-neuter programs our national custom, primarily for control of the population explosion. Shelter medicine experts developed the concept of ultra-early spay-neuter of kittens and puppies prior to adoption. This practice was embraced by thousands of rescue organizations across the country, including the Peter Zippi Fund for Animals (founded in 1977 by yours truly) which has rescued and placed over 11,600 animals. Our organization looked at the data and felt that early spay-neuter was the best answer to address the horrible situation in American Shelters where animals are euthanatized because they were born feral, dumped or unwanted.

Now there is mounting epidemiologic evidence that we might be jeopardizing the well being of pet dogs with the early spay-neuter policy. The data is not persuasive for felines but there are some issues with the size of the urethra in early neutered tom cats that may impact their health.

My special interests in practice have been cancer medicine and Pawspice (pet hospice). It is earth shattering to consider that some of the cancer's that we have been battling may have been potentially enhanced by early spay and neutering instead of the reverse! Zink points out a retrospective study published in 1999 by Ware et al that found a 5 times greater risk of cardiac hemangiosarcoma in spayed dogs vs. intact female dogs. Hemangiosarcoma is one of the three most common, devastatingly fatal cancers in larger dogs, especially German Shepherd Dogs and Golden Retrievers. We see it most commonly as malignant growths in the spleen; however 25% of cases involve the heart and 25% appear in multiple locations. Ware's study also found a 2.4 times greater risk of hemangiosarcoma in neutered dogs as compared to intact males. This information has been around in journals for almost a decade but it takes time to consider large epidemiological studies as evidence based medicine and useable in decision making.

A 2002 epidemiological study of 3218 dogs done by Cooley and Glickman, et al, found that those neutered before a year of age had a significantly increased chance of developing osteosarcoma. While another study showed that neutered dogs were at two-fold higher risk of developing osteosarcoma.

In addition, we need to re-examine the common belief that neutering dogs would help reduce prostate cancer. In fact, Obradovich et al in 1987 reported that neutering provides no benefit in protecting dogs from prostate cancer. Neutering definitely offers protection from recurrence of androgen hormone dependant perianal tumors.

There is clear epidemiological evidence that female sex hormones cause mammary cancer. There is a slightly increased risk of mammary cancer in female dogs allowed to endure one heat cycle and that the risk is increased with each additional estrus until the dog is 2.5 years old. In dogs, 30-50 % of mammary cancers are malignant while in cats, the rate of malignancy is 95-98%. Therefore, all mammary tumors in dogs and especially in cats should be surgically removed and biopsied as soon as they are detected. Early detection and excision can improve the prognosis.

It is well known the incidence of urinary incontinence in female dogs that are spayed early is increased over non-spayed female dogs. This is due to the role that ovarian hormones play in the maintenance of genital tissues and urogenital contractility. Aron, et al, in 1996, reported that male dogs that were neutered early had an increased risk of developing urethral sphincter incontinence. A health survey of several thousand dogs by the Golden Retriever Club of America showed that spayed or neutered dogs had a greater risk of hypothyroidism. In 2001, Howe & Slater reported an increase of infectious diseases in dogs spayed or neutered at or before 24 weeks of age verses

over 24 weeks of age. The 2005 AKC-Canine Health Foundation reported a higher incidence of vaccines reactions in neutered dogs as compared to intact dogs.

If we consider the information in Zink's article, it is evident that we need more information and more leadership from our academicians to clarify our positions on early spay-neuter. This reminds me of the profession's dilemma over the issue of using certain vaccines that were known to be potentially carcinogenic in 1:1,000-10,000 cats. If your cat that got Feline Vaccine Associated Sarcoma, it is a huge and important issue. The actual rate of disease is difficult to assess and is most likely under-reported in pet animals, given the stringent requirements of informatics reporting. Many organizations which breed service dogs such as Guide Dogs for the Blind and the Morris Animal Foundation, www.curecaninecancer.org are keeping prospective records that may answer these questions. My suspicion is that the abnormalities discussed above are real and under-reported in the veterinary literature. The best thing we can do is to advise our concerned clients on an individualized basis looking at each animal's role (agility, sports, jogging buddy, sled dog, service dog) within the human-animal bond.