

Purdue University Cooperative Extension Service, West Lafayette, IN 47907

Benefits of Castration in Male Dogs

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Introduction

The surgical procedure that involves the removal of the male gonads-testes-is called orchidectomy or orchietomy; however, this procedure is more commonly known as castration (Johnston, 1991). This surgery is generally performed in male dogs for three reasons: to modify undesirable behavior, prevent health problems, and control pet population. This publication addresses the significantly beneficial effects of castration in male dogs.

Behavior Benefits

Androgens, or male sex hormones, such as testosterone have a number of behavioral influences in adult males. A previous study (Hart and Eckstein, 1997) showed that sexually dimorphic behaviors, that is behaviors more common in one sex than the other, are reduced or altered by castration. Behaviors that are highly dimorphic in male dogs are urine or scent marking, aggressiveness toward other male dogs, mounting other dogs, and roaming away from home to find potential mates. Castration will not change behaviors that are similar between males and females such as hunting, playfulness, house guarding, activity level, and seeking affection.

Castration of male dogs results in a rapid or gradual decline of indoor urine marking, intermale aggression, and mounting of other dogs in approximately 50 to 70 percent of the dogs after castration. However, roaming to find a potential mate is reduced in 90 percent of the dogs (Hopkins, Schubeit, and Hart, 1976) the adrenal gland normally does not increase its testosterone production in

amounts sufficient to have any influence on maintenance of the undesirable behavior. The retention of undesirable male behaviors following castration is probably not due to residual amounts of testosterone in the blood. A possible explanation for the persistence of the behavior in some animals appears to be a reflection of individual differences related to the sensitivity of the tissue to withdrawal of the testosterone (Hart and Eckstein, 1997).

Studies indicate that castration before puberty to prevent unwanted behavior is as effective as castration of the adult animal in eliminating the behavior once it occurs (Hopkins, Schubeit, and Hart, 1976; Salmeri, Olson, and Bloomberg, 1991).

Health Benefits

Castration also provides certain health benefits for the male dog, such as prevention of prostate gland enlargement, perineal hernias, and testicular tumors. Benign prostatic hypertrophy or hyperplasia is the enlargement of the prostate gland which is located near the neck of the urinary bladder of male dogs. It is a condition that is testosterone dependent and occurs frequently in older intact male dogs.

Prostatic enlargement generally results in straining related to defecation and/or urination. Benign prostatic hypertrophy is both prevented and treated by castration. The prostate gland will usually be normal or smaller than normal in size following this surgical procedure (Johnston, 1991; Slatter, 1993).

Perineal hernias occur most commonly in uncastrated male dogs from 7 to 9 years of age. This



condition occurs when the pelvic diaphragm becomes weak and fails to support the rectal wall. The degenerative changes in the support function of these muscles allow the rectal wall to protrude in the pelvic canal. Constipation and straining are the most common clinical signs. Consequently, the enlargement of the prostate gland in older dogs leads to tenesmus which may contribute to the development of perineal hernias. Surgical repair of hernias and castration are performed in intact male dogs to treat this ailment (Slatter, 1993; Salisbury, 2001).

Testicular tumors are the second most common tumor in male dogs, especially in older dogs. The three most frequent types of testicular tumors are seminoma, interstitial cell tumor, and Sertoli cell tumor. These tumors can occur individually or in a combination of multiple tumors in a testis. The risk of neoplasia, which is a new and abnormal growth, increases when the animal has cryptorchidism or undescended testes (Slatter, 1993; Moulton, 1990).

According to a study performed by Hart (2001), a small percentage of aging castrated male dogs are predisposed to the progression of cognitive impairment. Cognitive impairment refers to the behavioral changes that occur in senior dogs as a result of disturbances of memory, learning, and the circadian rhythm (sleep-awake cycle). The study suggests that the presence of circulating testosterone in intact male dogs slows the progress of cognitive impairment. Consequently, this should be considered before making the decision of castration.

Pet Overpopulation

Pet overpopulation is an enormous problem in the United States. The Humane Society of the United States (2003) indicates that every year between six and eight million dogs and cats enter shelters. A study (Patronek, Glickman, Beck, McCabe, and Ecker, 1996) suggests that unwanted behaviors were one of the reasons that pet owners relinquished their dogs to animal shelters. This excess of animals in shelters leads to euthanasia of healthy, but unwanted pets in animal shelters. Many people believe that sterilizing pets is the main form to control pet overpopulation, however this is not the case. Educational programs for pet owners and the general public on such issues as preventing and treating inappropriate behaviors can reduce the number of dogs handled annually by shelters. Even though castration eliminates male dog's reproductive capacity, the overall effect on pet overpopulation is minimal. However, castration of male dogs, and the reduction of the undesirable behaviors associated with intact males, may result in fewer male dogs being relinquished to animal shelters, or otherwise being removed from the home.

Summary

Castration of male dogs provides behavioral and health benefits, as well as aids in pet population control. It can help prevent some undesirable behaviors such as urine or scent marking in the house, mounting other dogs, aggression toward other male dogs, and roaming. In addition, the removal of the gonads eliminates or decreases the incidence of several diseases of the reproductive and non-reproductive systems. Education of pet owners can reduce the animal populations in shelters which contribute to the euthanasia of unwanted pets. Also, castration can help to prevent unwanted litters that contribute to the pet overpopulation problem. The quality of life in male dogs can be improved by castration, but it depends on the dog and the situation in which he lives.

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