Ovaries and Testes, Oh My!
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Benefits

Why spay/neuter?
- Population control, especially in shelters
  - 3 to 4 million cats and dogs are euthanized per year due to overpopulation
- Reduce any instinctive breeding behaviors (mounting, marking)
- Ability to house both a male and female in same household without the risk of breeding
- Some health benefits that may be associated with spaying/neutering
- Prevention of unintended reproduction
- Decreases roaming behavior by 90% and reduces male aggression by 62%, urine marking by 50%, and mounting by 80%

Risks of Spay/Neuter

- Surgical risks - complications from surgery range from 2.6% to 20%
- Neutering can increase risk of developing osteosarcoma, an aggressive cancer with poor long-term prognosis usually treated with surgery and chemotherapy
- Spayed females more likely to develop splenic hemangiosarcoma (2 time increase) and cardiac hemangiosarcoma (5 time increase) compared to intact females
- Neutering increases risk of urinary incontinence
- Spaying increases risk of vaginal infections
- Orthopedic problems are more likely as growth is influenced by production of sex hormones

Risks of Not Spaying/Neutering

Risks of Not Spaying
- Females can develop mammary tumors if ovaries are not removed
  - ~50% of canine mammary tumors are malignant
  - 85-90% of feline mammary tumors are malignant
- Pyometra, a bacterial infection, can occur in the uterus and dystocia can be common in cats and dogs (depending on the breed) and may have to undergo C-section (much riskier than a planned spay)

Risks of Not Neutering
- Prostate disease = benign prostatic hyperplasia
  - 15-40% for dogs under 7 years
  - 60-100% for dogs over 7 years
- Can cause difficulty urinating or defecating or have bloody preputial secretions
- Prostatitis has been reported in up to 28.5% intact male dogs

Surgical Procedures

Ovarihoysterectomy (Spay):
- Removal of a female dog’s reproductive organs (ovaries, fallopian tubes, and uterus)
  - An incision is made between the umbilicus and the cranial brim of the pubis
  - The uterine horn is exteriorized with a spay hook
  - The ovarian vessels are cut and tied off using hemostat tying
  - A female dog will lose the ability to reproduce and heat cycles will be eliminated
  - The removal of only the ovaries, known as ovarioectomy, is not commonly performed

Orchietomy (Neuter):
- Remove of a male dog’s testicles
  - A scrotal incision is made over the testicle and the testicle is exteriorized
  - A hemostat tie is performed to remove the testicle
  - The male will no longer be able to reproduce
  - Neutering is also referred to as “castration”
  - Alternative procedure such as vasectomies, severing the tubes responsible for sperm, are not commonly performed

Recovery:
- Keep dog isolated from other animals after surgery
- Do not let the dog outside for long periods of time, best if they remain inside
- Jumping and running should be kept to a minimum
- A recovery cone collar is recommended to ensure the area cannot be licked
- Check incision daily to ensure it is healing properly
- Dog should not be bathed for at least 10 days following surgery
- Watch for any vomiting, diarrhea, lethargy, decreased appetite, uncomfortable, incision is bleeding or redness occurs

Cost:
- Low-cost clinic is typically $45-135
- High-cost can exceed $300
- Cost is impacted by:
  - Size of animal
  - Age of animal
  - Whether both testes have descended
  - Whether blood work is performed prior to surgery

Conclusions

- Spaying/neutering is a controversial procedure
- Pros and cons must be weighed before deciding whether to spay/neuter or not
- Each animal is unique and may differ on a case-by-case basis
- A veterinarian should be consulted to assist in making a decision

Bibliography


Figure 1: An image of the surgical procedure of Ovarihoysterectomy (Spay) in a female dog

Figure 2: An image of the surgical incision of Ovarihoysterectomy (Spay) in a female dog

Figure 3: Surgical instruments used for a spay or neuter procedure.

Figure 4: Even though these puppies are cute, they contribute to overpopulation.