**Canine Ovariohysterectomy (Spay)**

Surgical sterilization of the female dog, commonly referred to as spaying, is one of the most significant aspects of female dog care an owner can provide. The benefits to the dog FAR outweigh simply not having puppies, though as pet over-population appears a societal problem it is important to be part of the solution rather than part of the problem.

Spaying involves removal of the uterus and ovaries. It is a major surgery but a commonly performed one, ideally performed while a female dog is still in puppyhood, prior to her first heat cycle which commonly occurs at roughly 6 months of age.

**WHY FEMALE DOGS SHOULD BE SPAYED**

***Mammary Cancer Prevention***

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A female dog spayed before her first heat will have a near zero chance of developing mammary cancer.

After the first heat, this incidence climbs to 7% and after the second heat the risk is 25% (one in four!). It is easy to see that an early spay can completely prevent what is frequently a very difficult and potentially fatal form of cancer.

But is it too late if a dog is already past her second heat? No, in fact spaying is important even in female dogs who already have obvious tumors. This is because many mammary tumors are stimulated by estrogens; removing the ovaries, the source of estrogens, will help hinder tumor spread.

Spaying removes both the uterus and both ovaries and is crucial in the prevention as well as the treatment of mammary cancer.

***Pyometra Prevention***



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Pyometra is the life-threatening infection of the uterus that generally occurs in middle-aged to older female dogs in the six weeks following heat. The hormone progesterone, which primes the uterus for potential pregnancy, does so by causing proliferation of the blood-filled uterine lining and suppressing uterine immune function. It is thus easy during heat for bacteria in the vagina to ascend to the uterus and cause infection. The uterus with pyometra swells dramatically and is filled with pus, bacteria, dying tissue, and toxins. Without treatment, the dog is expected to die. Despite her serious medical state, she must be spayed quickly if her life is to be saved.

* This is an extremely common disease of unspayed female dogs.
* Without treatment the dog will die.
* Treatment is expensive.
* Treatment involves surgery in a potentially unstable patient.
* Spaying prevents the whole thing.

The older unspayed female dog has an irregular heat cycle. There is no end of cycling comparable to human menopause. If you still decide against spaying, be familiar with the signs of pyometra, which include loss of appetite, lethargy, vomiting, excessive thirst, marked vaginal discharge.

***Simple Convenience***
The female dog comes into heat every 8 months or so. There is a bloody vaginal discharge and local male dogs are attracted. Often there is an offensive odor.

***All of this Disappears with Spaying.***

**Now That we Know Why it is a Good Idea to Spay, What Exactly Happens?**

It is important that the patient has not been fed in at least 8 hours. Anesthetic medications commonly induce nausea and vomiting can be dangerous in a sedated patient (vomit can be inhaled/aspirated leading to pneumonia).

A preoperative evaluation is performed; blood work is recommended as a normal preanesthetic consideration. An intravenous catheter will be placed to facilitate the administration of anesthetic drugs, supportive fluid therapy, and for use in case of emergency. This requires shaving a small patch of hair on one of the legs.

A sedative/relaxant and pre-operative pain medication will be administered to ease the induction of anesthesia.

At this point, the IV catheter is placed in either front leg.

A medication called Propofol is given intravenously to induce sleep. This medication is called an induction agent and lasts only long enough to establish the maintenance of anesthesia by the inhalant anesthetic (Isoflourine gas). Once the pet is asleep, an endotracheal tube is placed in her throat to ensure that a clear airway is maintained through out the procedure for optimal gas flow.

Sometimes a cough is noted for a couple of days after surgery. This may have been caused by mild irritation from the endotracheal tube. Such coughs only last a couple of days; anything that persists longer should be re-evaluated.

The tube is hooked up to a machine that delivers a specific concentration of inhalant gas mixed in 100% oxygen. The technician is assigned to monitoring this pet so that the concentration of inhalant gas can be changed as needed and patient mucous membrane color, heart rate, respiration rate, blood oxygenation, and blood pressure are regulated/maintained within normal and safe parameters.

On the surgical table, the abdomen is shaved and scrubbed. The bladder is emptied and the patient is draped with sterile surgical cloth to isolate the area where surgery will take place.

An incision is made on the midline of the abdomen, and the three points where the ovaries and uterus attaches are tied off and cut. The abdomen is checked for bleeding and two or three layers of sutures are placed to close the incision. The sutures may be intradermal and will dissolve internally over time, while in other cases external sutures that need to be removed 10-14 days post-surgery will be placed for added support. It is helpful to know that should the skin stitches come out, there are two layers below holding everything closed.

The technician continues monitoring vitals until the pet wakes and is able to swallow at least 2 times, then the endotracheal tube may be removed and the patient is kept in a comfortable observation kennel until she is able to go home.

**What to Expect at Home**

Most spay patients go home the same day as if the doctor has no concerns, although they will need pain medication for a few days. Due to effects of the anesthetic your pets GI system will be moving slowly for 12-24hrs, the first night after being home for several hours giving your pet time to get situated and relax, feed her only half the normal amount of food to prevent any regurgitation. Normal feeding may resume the next day.

Some nausea may occur in the first couple hours after surgery as well and would not be unusual for the dog to refuse food for a day after surgery.

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Dogs who show an interest in licking their stitches will need an Elizabethan or "E" collar to restrict access to the stitches. This is not the most comfortable or fun for the dog but it must be used strictly until the stitches are out and the incision is healed or complications may occur.

Activity should be restricted during the week following surgery. Excessive activity can lead to swelling or fluid accumulation under the incision. Leash walking during this period to restrict running is very important, it is also a good idea to keep the pet from stairs.

**What’s the difference between spaying in a hospital versus spaying in a low cost spay clinic?**This question may have a very regional answer depending on what sort of low cost facilities are available in a given area. Some areas have some sort of low cost spay/neuter option (consult your local animal shelter for more information). There are some general principles that tend to hold true.

Low cost spay/neuter facilities operate on a tight budget in order to provide a low cost service and still be able to pay for supplies and staff. This means they use cheaper materials for suture and anesthesia, often have limited hours, and may not have state of the art monitoring equipment or capabilities in case of emergency. Probably most important is the fact that in order to stay in business, a low cost clinic must perform a high volume of surgeries each day. This limits the individual attention a patient can receive if an “assembly line” approach is used. Often these are the situations where only the ovaries are removed and the uterus is left behind so as to save time or where the entire spay is performed through a tiny incision only a half inch or so long so as to save time. Most of the time, the end result is the same: a spayed happy female and, of course, cost can be an important factor. It is a good idea to know what one is paying for.

A full service hospital tends to have more nursing care (such as a technician tableside monitoring anesthesia throughout the procedure), monitoring technology (EKG, pulse oximeter, blood pressure monitor, respiratory monitor etc.), fluid support, all day patient observation, safer anesthetics (which tend to be more expensive), less reactive suture materials (which also tend to be more expensive), and most importantly individual attention to each patient. As a prominent member of the surgery board once said, “Speed is not a legitimate goal in surgery. Doing a careful, meticulous job is the real goal.”