Early Age Spay and Neuter in the Cat  
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Introduction
While it may seem that interest in early age altering is a recent phenomenon, it has not only been talked about, but it has been practiced for over 25 years in North America. Early age altering usually refers to spays and neuters done between the ages of 8 and 16 weeks instead of the conventional 5-7 months. Attention has recently focused on early age altering of animal shelter pets before adoption. Early age altering is proposed as a more reliable means of preventing shelter pets from reproducing after adoption. Surgical sterilization is recognized as the most common and effective means of reproductive control in dogs and cats. Studies show that, despite economic incentives, many cats and dogs adopted from shelters have one litter before they are sterilized. Owner compliance with sterilization programs is often under 50%, despite screening of adoptive homes, prepayment of or discounted surgery fees, contracts requiring altering and follow up by shelter personnel. In turn, about 1/3 of cats and dogs are relinquished at shelters because they are from an unwanted litter.

The American Veterinary Medical Assoc. endorsed the concept of early age altering in 1993 when the following resolution was passed by the House of Delegates:

RESOLVED, that AVMA supports the concept of early (8-16 weeks of age) ovariohysterectomies/gonadectomies in dogs and cats, in an effort to stem the overpopulation problem in these species.

Since 1993, both the American Animal Hospital Association and the American College of Theriogenologists have approved position statements supporting early age altering.

Scientific Studies:
It is a paradox that one of the oldest and most commonly performed surgical procedures for companion animals is one of the least studied. Very little scientific data exists to propose the optimal age for altering the dog or cat. Prepubertal altering is commonly performed in farm animals and laboratory animals. The most obvious reason for altering pets between 5 and 7 months of age is that veterinarians are comfortable performing surgery in this age group and adverse outcomes are uncommon. The safety of surgery and anesthesia for the pediatric patient has also been questioned, partly due to unfamiliarity with pediatric patients and partly due to concerns about anesthetic agents and protocols.

Other concerns about early age altering center around perceived potential detrimental effects in the adult animal. Such problems as stunted growth, obesity, behavioral changes and lower urinary tract disease in cats have been voiced. A common misconception that early altering predisposes male cats to urethral obstruction or lower urinary tract disease dates back to a flawed and outdated study (Engle, 1977). Over the last 10 years, however, scientific evidence and clinical experience has been mounting that most of these concerns are unfounded. There is very good scientific evidence to show that lower urinary tract disorders in male cats are not related to castration, but to a whole host of factors including diet.

Obesity is a multifactorial problem with diet, exercise, breed, age and sexual status all playing a role. Recent research into the dietary caloric needs of intact, early altered, and conventionally altered cats (Root, Johnston, Olson, 1996) shows that altered cats require fewer calories and that obesity may be caused when food intake is not adjusted accordingly. Male cats altered at both 7 weeks and 7 months required 28% fewer calories than intact male cats. Female cats altered at both 7 weeks and 7 months required 33% fewer calories than intact female cats. Muscle development in the male cat is androgen-dependent. Therefore, a decrease in muscularity will be seen in male cats no matter when they are altered.
More Scientific Studies:
In a University of Florida study (Stubbs et al, 1996), researchers evaluated skeletal growth, as well as other factors in 3 groups of cats: those altered at 7 weeks of age, those altered at 7 months of age, and a sexually intact control population. The distal radial physis normally closes after puberty, at about 14-20 months of age. It is suspected that gonadal steroids are necessary to facilitate physeal cartilage maturation. In this study, delayed closure of the distal radial growth plate was seen in cats altered at both 7 weeks and 7 months. However, this did not alter the mature radius/ulna length so that there was no distinct difference among the 3 groups of cats. Another study on radial physeal closure in early altered cats at the University of Minnesota (Root et al, 1997) found that the mature radius length was greater in cats altered at both 7 weeks and 7 months versus intact cats. Therefore, it appears that altering at any age prior to 7 months will delay physeal closure. Rather than causing stunted growth, early altering may possibly be associated with normal stature or increased stature. While an increased risk of physeal fractures has been postulated to be a possible result of delayed closure, to date, this has not been evaluated.

In the University of Florida study, urethral pressure profilometry revealed no adverse effects on urethral function in cats from early altering. Urethral diameters were similar in the cats of all 3 groups. The penis could be fully extruded in all neutered cats in this study. The external genitalia of male and female cats in both age groups remained infantile compared to the intact cats. In another study in early-altered cats at the University of Minnesota (Root, Johnston, Johnston, Olson, 1996), researchers found that there was no difference among the same 3 groups of cats in urethral diameter (both pre-prostatic and penile). The researchers also found that complete penile extrusion was possible in all the control intact cats at 22 months of age. However, complete extrusion was possible in only 60% of the cats altered at 7 months and in none of the cats altered at 7 weeks. The balanopreputial fold is an androgen-dependent membrane that connects the preputial mucosa to the penile mucosa at birth. The longterm significance of incomplete penile extrusion is unknown.

Behavioral characteristics were similar between both groups of altered cats in the University of Florida study. However, the sexually intact cats of the control population demonstrated less affection toward humans and more interspecies aggression. Altering at either age did not induce lethargy in male or female cats. The body weight and body fat of both groups of altered cats was similar, and was higher than for sexually intact cats.

Howe et al (2000) followed a group of 263 cats from animal shelters for a period of 37 months after gonadectomy surgery. Cats were allotted to two groups based on age at gonadectomy: prepubertal (under 24 weeks old) and traditional (over 24 weeks old). Telephone interviews were conducted with the adoptive owners and veterinary records were also examined in some cases where a medical or behavioral problem had occurred. The study found that cats altered at less than 24 weeks of age did not have increased incidences of infectious disease, behavioral problems or illness of any kind during the 37-month follow-up period. They also found that early altered cats were retained in the adoptive homes at the same rate as cats altered at the traditional age.

Currently, more pediatric spays and neuters are performed in animal shelters and humane societies than in small animal veterinary practices. General practitioners are more likely to be asked to perform early age altering by breeder clients than the average pet owner. Many breeders now prefer to sell only altered kittens as pets. In a recent informal survey of cat breeders, about 70% of those surveyed held the opinion that access to early altering was important to them (Little S, unpublished data, 2000). Another benefit is kittens that require elective surgery for other reasons (i.e. hernia repair) may be early altered at the same time.
Some guidelines for pediatric patients can facilitate safe and effective anesthesia and surgery:

1. ensure kittens have a complete physical exam prior to surgery; are vaccinated and treated for parasites several days before; postpone surgery if any abnormalities are found (such as cryptorchidism)

2. weigh each kitten accurately (to the nearest 100g) to calculate drug doses

3. combat hypoglycemia by withholding food for only 3-4 hours before surgery; feed a small meal within 1 hour of recovery from anesthesia

4. keep kittens with their littermates before surgery in a warm, quiet environment to decrease excitement and stress; minimize handling; use IM injections rather than IV to minimize restraint and stress

5. treat kittens with a prolonged recovery or who will not eat after recovery with 50% dextrose given orally

6. combat hypothermia with insulation against cold surfaces (i.e. re-circulating warm water blankets) during induction and surgery; minimize hair coat clipping; avoid alcohol in surgical preps; warm surgical prep solutions; check rectal temperature at the end of surgery; postoperatively, use warm blankets, hot water bottles, or heat lamps (but monitor closely to avoid thermal injury)
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A litter of 8 week old kittens are kept together in a quiet place before surgery. They are fasted for only about 3 hours before surgery.

After sedation, isoflurane anesthesia is administered to male kittens via a mask. The black wire attached to the breathing circuit is a respiratory monitor.

Female kittens are induced with isoflurane and then intubated with a small diameter endotracheal tube.
A reproductive tract (uterus and ovaries) from an 8 week old kitten. The organs are resting on gauze that is 2 inches square.

The skin incision for females after spay surgery is very small. It is typically closed with subcuticular sutures and/or surgical adhesive. Skin sutures are not used to avoid the risk of the queen or kitten chewing on them.

A litter of kittens eating after surgery. Kittens are encouraged to eat a small meal within one hour of surgery.
References for
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Fonte: http://catvet.homestead.com/EarlyAlter.html