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Geriatric Program for the Small Animal Clinic

MOLLY FLAHERTY, DVM[†], AND KAREN CAMPBELL, DVM^{††}

Geriatric medicine is becoming increasingly important in small animal practice. Although this area of practice is a relatively new focus, the benefits of such programs are becoming apparent to the veterinarian and clients. Pets are living longer and geriatric pets occupy a significant portion of small animal practice. Over 40% of dogs and 30% of cats in U.S. households are over the age of six years.¹ The increasingly aged pet population necessitates more geriatric care. Clients understand their older pet may have many of the same problems as older humans and are often willing to pay for extra geriatric care because of the strong bond with their older pet.² A geriatric program can be rewarding to the veterinarian professionally and financially. Patients also benefit because they receive better care that can detect and may help to prevent treatable diseases earlier.

Several considerations are important when setting up a geriatric program in a small animal clinic. The most important areas of geriatric care need to be investigated through reading and continuing education. A geriatric program should address the following areas: cardiac, neoplasia, renal, endocrine, oral cavity, and nutrition. Planning how to implement the program is the next step. Finally, reevaluation and refining of the program should be done through client feedback.

Getting Started

Prior to implementing a geriatric program, you need to plan what the geriatric program will include and how to market it. Formulating a checklist of procedures, costs, handouts and information to be dis-

cussed with clients is important. It can continually be modified and improved upon as strengths and weaknesses are identified. Marketing should begin by designating an age at which pets should be considered geriatric. The rate of aging is different for cats and dogs and also varies among breeds and the individual animal. For convenience of this program, it is recommended to choose one age for all feline and canine pets at which to recommend geriatric screening.

Seven years of age is a reasonable time to begin geriatric screening for cats and dogs.^{1,3} To identify patients in this age range, a computer search should be conducted several times a year to flag any patients that have recently turned seven. A letter should then be sent to clients informing them of the geriatric program and its importance in their pet's health (Figure 1). Information on the program (including tests, costs and senior discounts) should be mailed with this letter.

All employees should be involved in the geriatric program. A staff that is properly educated and trained will help get the program started. Staff members can also be a great source of ideas, pointing out weaknesses and suggesting areas of improvement. They must thoroughly understand and believe in the program to obtain maximum staff support.^{3,4} Their input should be encouraged. If the staff feels they are part of the program they will be more likely to promote it. Receptionists can inform clients of the program when pets are getting close to geriatric age and can explain the importance of special geriatric care to interested clients. Veterinary technicians can be educated in areas of geriatric nutrition and dental care and can discuss these areas with clients. The rest of the marketing for the geriatric program should include geriatric mailings, posters, and handouts available in the waiting room.

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Figure 1: *Sample letter to mail clients when their pet reaches geriatric age.*

Dear _____,

Congratulations, Sadie has reached senior citizen status at our clinic. She has reached an age where she would be considered in the geriatric category. This allows her to begin our geriatric program and be entitled to senior discounts. We at _____ Pet Hospital strive to offer the best care we can for our older patients. This letter is to inform you of our geriatric care program, which we believe will help us to provide better health care to the older pet. These patients require extra attention to their medical care. Through preventative medicine and medical monitoring, we can help to provide healthier longer lives in many more pets.

Enclosed is a questionnaire, which may help to bring to attention any current problems your pet may have. Please take the time to fill it out and return it in the provided envelope. After returning the questionnaire, you may call to schedule Sadie's first geriatric physical exam. At that time, we can discuss a plan for Sadie's care during her mature years.

Thank you for allowing Sadie to be a part of our clinic. We hope to see her soon.

Sincerely,

_____, D.V.M.

Financial Considerations

Prices for geriatric packages should be determined and explained to clients prior to beginning evaluation and treatment. A senior discount can be offered for clients participating in the geriatric program, which would be a 10%-15% discount on tests performed during the geriatric evaluation. An extra incentive would be to offer a 5%-10% senior discount on procedures and treatments throughout the year for patients enrolled in the geriatric program.

Geriatric Package Information

The geriatric package should include a thorough medical history, complete physical exam, and an initial database, which can vary for the individual and the owner's choice. History should be complete covering past and current health problems, past surgery, behaviors, and diet history. A questionnaire mailed to owners may be completed before the geriatric visit (Figure 2) and will allow the owners more time to observe and remember problems at home. Responses to the questions can be used to further guide the veterinarian in questioning or testing.

After completing the history, a physical exam should follow including an ophthalmologic, neurologic, and rectal exam.² The minimum geriatric database should always include complete blood count, electrolyte evaluation, blood chemistry panel, urinalysis, and fecal exam.^{1,2,4} Based on information from tests and physical exam,

it can be determined if other procedures are warranted. These could include radiographs, ECG, ultrasound, blood pressure evaluation, and more sophisticated blood and urine tests to assess specific organ function.

Communication with Clients

After the initial exam and tests, findings should be reviewed prior to discussing them with the client. At this time, other important information should be presented including dental care, weight con-

Figure 2: *Sample questionnaire to mail to clients upon their pet reaching geriatric age.*

Please complete the following questionnaire for geriatric evaluation. If the answer to any of these questions is yes, please explain.

1. Have you noticed any changes in behavior?
2. Does your pet seem to drink more than usual?
3. Does your pet urinate more frequently or have accidents in the house?
4. Does your pet have trouble urinating or defecating?
5. Has your pet's appetite changed?
6. Have you noticed any weight gain or loss?
7. Have you noticed any change in hair coat?
8. Have you noticed any new growths or bumps on your pet's body?
9. Does your pet seem to have poor vision?
10. Does your pet seem to have trouble hearing?
11. Have you noticed any trouble in your pet getting up and down, or walking?
12. Does your pet seem painful anywhere?
13. Has there been any vomiting or diarrhea?
14. Does your pet have coughing spells?
15. Is there any difficulty breathing?
16. Does your pet seem intolerant to exercise?
17. Are there any other changes you have noticed?
18. Please tell us about your pet's diet including: brand of food, how much is fed, and any treats or table scraps.

trol, and nutrition. Any abnormalities should be addressed. Any additional tests or treatment would be recommended at this time. If results were normal, the benefit of having this information should be explained because it serves as baseline for comparison in the future. For example, some animals may normally run a little high on some blood chemistry values. This data would be useful should the patient become ill, and it is unclear if a slightly elevated chemistry value is indicating the problem area or is normal for this animal.⁵

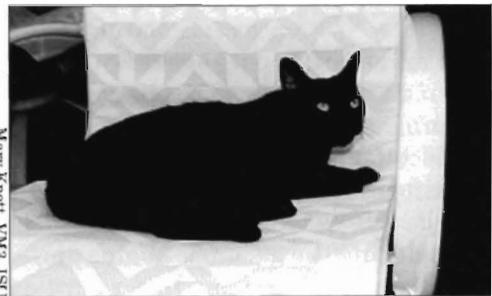
If a problem is identified during the geriatric work up, appropriate handouts on the area or disease should be made available to the client along with a thorough explanation. There are many handouts available for most diseases, or these handouts can be self-made. Treatment and follow up care should then be discussed at this time. Based on all the information gathered on the patient, a schedule can be made determining how often the animal should have geriatric exams. For most animals, an annual exam is adequate. For those with a disease process that needs to be more closely monitored, biannual clinic visits may be more appropriate.

Aging Process and Health

It is important for the veterinarian to understand the aging process and relay pertinent information to owners. Common geriatric diseases, and how the program will help minimize or prevent these disease processes, should also be well understood.

Aging has been defined as a progressive reduction in the ability of an organism to meet the demands of the environment.⁶ The aged body undergoes changes in structure and physiology of cells and organs. There are many theories on the aging process that leads to these changes. Some believe in a genetic influence and that the life span of cells is predetermined. Another theory suggests that over time there is an accumulation of cellular waste leading to cellular damage. In the immunologic theory, it is thought that aging results from alterations in the immune system. These changes in cells and organs

affect all aspects of body function, and physiologic and homeostatic mechanisms become sluggish, increasing the probability the animal will become ill or die from relatively trivial insults.⁷ There is not a consensus on the cause, but the changes associated with aging are identified as tissue dehydration and hypoxia, cellular membrane alteration, loss of muscle mass, tissue fragility, loss of flexibility, loss of protein mass, thickening of the lens, wrinkling of the skin, loss of nerve cells, decreased ability to survive stress, decreased or marginal function of cellular enzyme systems, decreased immune function, reproductive senescence, and increase in



"Lucky" Knott, a 12 year old neutered male cat, with hypertrophic cardiomyopathy and chronic renal failure.

incidence of neoplasia.^{6,7,8}

Some of the more common geriatric disease areas are cardiac, neoplastic, dental, renal, and endocrine diseases, including thyroid and adrenal function. The initial physical exam and geriatric testing should lead to detection of most of these problems sooner than physical signs would have prompted medical attention. The earlier the detection the more likely a positive treatment outcome.

Cardiac Disease. Cardiac disease is often first noticed during physical exam by detection of a heart murmur. If this is found during the geriatric physical exam, the next step should be to recommend thoracic radiographs and an ECG. Other clinical signs during physical exam or patient history may be coughing, exercise intolerance, arrhythmia, poor pulses, dyspnea, ascites, edema, or cyanosis. Any of these clinical signs should prompt further attention to the cardiac system.

Chronic valvular disease or endocardiosis is the most common heart

disease in geriatric canines.⁹ Physical exam most commonly reveals a systolic murmur over the affected valve. Coughing is the most common clinical sign, others include dyspnea, exercise intolerance, cyanosis or syncope. Medical management involves the reduction of exercise and stress, dietary sodium restriction, and drug therapy. Other common cardiac diseases in geriatric canines include cardiac neoplasia, cor pulmonale, and heart disease resulting from pulmonary disease.⁹

In feline geriatrics, the cardiac disease with the greatest prevalence is hypertrophic cardiomyopathy. These patients will present with a systolic murmur heard over the left side or over the sternum upon auscultation. If a new murmur is detected, there is an 80% chance the murmur is due to hypertrophic cardiomyopathy. These cats most often present with a tachycardia as high as 240 plus beats per minute. T4 levels should be checked because hypertrophic cardiomyopathy is often associated with hyperthyroidism. Whether treatment is initiated or not depends on the clinical signs. If the cat displays symptomatic to ameliorate signs, the animal should begin receiving proper treatment.¹⁰ If hyperthyroidism is found, treatment for the hyperthyroidism will help slow the progression of the cardiac-associated problem.

Neoplasia. Neoplastic disease in geriatrics can have many clinical presentations. Some will relate to the presence of the mass and others relate to the systemic effect especially paraneoplastic syndrome manifestations.¹¹ Problems often associated with neoplasia include chronic weight loss, recurrent fevers, dehydration, hypercalcemia, hypoglycemia, vomiting, seizures, and specific problems associated with the organ system involved. In a patient with signs such as these that are not attributable to another disease process, neoplasia should be considered. Palpation, radiographs, ultrasound or exploratory surgery may aid in finding a lesion. Neoplasia that is discovered early has a better prognosis especially when treatment



Echocardiogram of "Lucky" Knott demonstrating ventricular wall thickening seen with hypertrophic cardiomyopathy.

is initiated. Although the ultimate outcome is often not good, the life of the animal can be prolonged if the disease is found early enough. Recommending thoracic and abdominal radiographs in geriatric patients who have clinical signs attributable to neoplasia is a reasonable suggestion.

Renal Disease. The kidney is very vulnerable to age associated changes.¹⁰ Aged kidneys undergo changes not associated with disease that can predispose to a decline in renal function. These renal changes include structural and functional alterations. Some functional changes that occur are decreased glomerular filtration rate, decreased renal blood flow, decreased urine concentrating ability, and decreased ability to maintain sodium, water and acid-base homeostasis. Structural changes that occur are alterations in weight, volume, and decreased number of glomeruli.¹⁰ Because of these age related changes in renal structure and function, geriatric animals may be at increased risk of renal injury, which may lead to acute or chronic renal failure.⁷ Early detection of renal disease may allow the progression of renal disease to be slowed down by dietary manipulation and adequate fluid intake. Dietary recommendations are mentioned in the discussion on geriatric nutrition. Patients showing evidence of renal disease should be re-evaluated biannually and signs of disease progression should be explained to the owner so medical attention



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Osteosarcoma of the proximal tibia in a dog with a pathologic fracture seen in the diaphyseal region.

can be sought if these signs worsen.

Endocrine. Endocrine disorders are often presented in geriatric animals and the tell-tale signs should be looked for during physical exam. Hypothyroidism is a commonly diagnosed endocrine disorder in dogs. Onset of clinical signs can occur at any age. Signs attributable to this disease are mental dullness, lethargy, exercise intolerance, increase in weight, heat seeking, poor hair coat, stiffness, muscle wasting, constipation, diarrhea, vomiting, ocular abnormalities (corneal lipid deposits, corneal ulceration, uveitis), bradycardia, cardiac arrhythmia, atherosclerosis, vestibular deficits, megaesophagus, laryngeal paralysis, and lower motor neuron signs.⁶ Laboratory findings associated with hypothyroidism may show hypercholesterolemia, hyperlipidemia, increased creatinine phosphokinase, and a normocytic, normochromic, non-regenerative anemia. A thyroid assay is indicated if the geriatric exam reveals any suspicion of hypothyroidism.

Hyperthyroidism is the most common endocrine disorder of middle-aged and older cats. The mean age of onset is 12.5 years of age. It is a result of functional hyperplasia of one or both thyroid lobes. Typical clinical signs are weight loss, polyphagia, vomiting, polyuria, polydipsia, hyperactivity, dyspnea, panting, and diarrhea. Physical exam may reveal a thin body condition score, aggression, unkempt hair coat, tachycardia, heart murmur, and palpable thyroid mass. Occasionally, cats may present with signs opposite of what would be expected such as decreased appetite, decreased activity, and weakness.¹² Older cats showing general signs of malaise that could be attributed to hyperthyroidism should have the T4 levels checked and the thyroid area should be palpated on all older cats. Treatment is usually relatively simple. Methimazole (Tapazole®) is the drug of choice. Alternatives include surgery and radioactive iodine therapy.

Hyperadrenocorticism or Cushing's syndrome should be kept in mind as it is largely a disease of older dogs. Median age is 7 to 9 years old for disease of pituitary origin and 9 to 13 for adrenal tumors. Progression is slow and owners have usually noticed signs for 1 to 6 years before diagnosis is made, but often assumed the changes were normal aging. Thorough questioning during a geriatric exam can help reach this diagnosis sooner. Presenting clinical complaints usually include polyuria, polydipsia, polyphagia, weight gain, behavior changes, lethargy, reluctance to exercise, panting, hair loss along the trunk, and abdominal enlargement.¹² Geriatric tests may find increased ALP, increased ALT, increased cholesterol, increased glucose, decreased BUN, lipemia and a low urine specific gravity. The ACTH stimulation test can be used when there is a suspicion of hyperadrenocorticism.¹³

Oral Cavity Disease. Oral cavity disease is an important consideration in geriatric health care. This area is important especially being able to get client compliance by encouraging appropriate dental care at home and scheduled dentals at the veterinary hospital. Dental exams during the geriatric physical can identify oral dis-

ease in early stages before problems become irreversible. Oral problems can be a source of other systemic problems. An animal with oral disease may be reluctant to eat which can lead to poor nutrition and predispose an animal to other systemic diseases. If oral disease is present, bacteremia can result which can spread to other parts of the body such as the kidney, liver, heart and lungs.¹⁴ Findings from the oral cavity examination can also suggest problems in other parts of the body such as oral ulceration or uremic odor from renal failure, jaundice from liver disease, neoplasia that has spread to the oral area, or cyanotic mucous membranes due to cardiac or respiratory insufficiency. Clinical signs in animals with oral disease may include halitosis, excessive salivation, pawing at the mouth, dysphagia, vomiting, facial swelling, loss of appetite, and weight loss.¹⁴

Clients should be educated on the importance of proper dental care. They should be made aware of the effect and importance of oral disease on other body systems. Clients should be shown how to clean their pet's teeth and check the oral area for abnormalities. Ideally, this program should have begun at an early age but if it is new to the animal it should be explained how to slowly adjust the pet to the new experience. A schedule for home brushings and dental cleanings at the veterinary clinic should be recommended. With client education and preventative dentistry, many oral and other systemic problems can be prevented.

Nutrition. The geriatric evaluation should include a complete nutritional assessment. Everything that the pet is fed should be identified, including normal diet and any additional foodstuffs like commer-

cial treats or human food tidbits. Other information needs to be collected like the brand of food fed, how much is given, how well the pet likes it, the frequency of dog food brand changes, any supplements used, and the quantity and the frequency of any treats given to the animal. The patient's visible weight condition should be evaluated to assess if this diet is appropriate for the patient's needs. It should be determined if the patient is at a health risk due to diet or weight.

The body condition score system developed by Purina can be used to assess a patient's body weight. When used consistently, it has been found to reliably and repeatedly assess body condition. It consists of guidelines to visualize and palpate the body and determine if the animal is over or under weight.¹⁵

The most common diet concerns in geriatric animals are obesity, weight loss, chronic renal disease, and congestive heart failure. Geriatric animals generally have a lower energy requirement. Nutritional changes recommended for obesity include reduced fat and calories in the diet. Unexpected weight loss should prompt finding an underlying cause such as undetected illness. Symptomatic treatment would be to feed a high-calorie, nutrient-dense food. Sometimes offering a more palatable food that is moistened and warmed will encourage a better appetite and help with weight loss.¹⁶

Chronic illnesses such as heart disease and kidney disease can sometimes be related to diet and can be improved by making changes in the diet. Nutritional objectives in a patient with congestive heart failure include slowing the progression, ameliorating clinical signs, and reducing the heart's workload. It is important to feed a low sodium and chloride diet. Because reduced liver and kidney malfunction is often present with heart failure in dogs, it is recommended to also feed moderate quantities of a high biologic value of protein. If the patient is receiving diuretics, they are likely to lose large quantities of B vitamins. Specific diets designed for cardiac patients should contain additional B vitamins.¹⁷

Dietary elements of concern in chronic renal failure are protein, phosphorus and potassium. Protein restriction has been



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Plasma cell tumor on the tongue of a dog.

used to control signs of uremia. Moderate levels of protein have been found to work best in these patients. In dogs, it is also beneficial to reduce phosphorus in the diet to control secondary hyperparathyroidism. In feline patients, hypokalemia is the most common electrolyte abnormality in chronic renal failure. Correction of potassium depletion may stabilize or reverse renal dysfunction.¹⁰

Pet food labels should be evaluated by the veterinarian to determine the best recommendations for clients. Many of the professional brands have diets formulated for specific disease processes that will fit the specific needs well.

Vaccination

Vaccination is an area that has been important throughout the pet's life and it should continue to be maintained in the geriatric pet. The aged animal has a weaker immune system and can become more susceptible to infectious diseases. It is also a concern that vaccinating geriatric animals may put an extra strain on their lowered immune system. The best way to balance this is to determine what vaccinations are necessary in the geriatric patient. Rabies vaccines must be given according to state and local constraints. They should be given in the longest coverage permitted. If your state allows a three year vaccine then that should be used. Indoor cats not exposed to new animals should not be unnecessarily vaccinated with feline leukemia virus vaccines. Boosters for regular annual vaccines should be continued. If the owner's are willing to pay the extra cost of measuring titers to these vaccines annually then the animal can be vaccinated less often.⁵ This would be the best plan in geriatric animals and should be made known to clients as an option.

Human Animal Bond/Pet Loss

The human animal bond and pet loss are areas that are especially important in dealing with geriatric animals and their owners. Geriatric pets and their owners

have often had many years to develop a close relationship. Geriatric animals are also closer to the end of their life and pet loss will be more common in this age group. Clients who are concerned enough to enroll their pet in the geriatric program are likely those who have a strong attachment to their pet. For these reasons, it is important for the clinic offering a geriatric program to also educate their staff on pet loss and human animal bond so they can be more understanding and compassionate to the client.

Veterinarians can educate themselves in this area and in turn, are better able to educate their staff. Areas of concern are handling euthanasia, clients dealing with anticipated loss, and dealing with a grieving client. Clients should feel that the staff is empathetic and cares about their loss. Referrals to pet loss support hotlines or therapists should be made to those in need of these services. Articles dealing with pet loss aimed toward the client should be available at the clinic. Sympathy cards should be sent after a pet is lost with the staff's signatures and a special mention pertaining to the particular pet. Clients will often remember more about how the clinic handled their pet loss than any other thing about that clinic or veterinarian. If it was handled well, it is more likely that future pets will be brought to the same clinic.

Conclusion

Once a geriatric program is well established in a small animal practice, it should prove to be a great asset to the clinic. Many clients and patients will benefit from the program. The reputation of the clinic will also benefit because of the proven interest in maintaining the best possible health of geriatric patients. This reputation will benefit the clinic in other areas as well. Staff will be proud of being a part of the program and working with dedicated clients. The practice owner will find the program to be professionally and financially rewarding. ♦

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Demystifying the Senior Year: Are the Rumors Really True?

LISA DE NAULT[†]

As we all go through our first three years here at ISU CVM, rarely does anyone speak about "the senior year". Sure, we all hear the myths and rumors about how awful this clinician is to work with and oh, never, never take that rotation or you will never see the light of day and become a vampire. The gossip runs wild and somehow makes its way upstairs to the underclass students. But what is fact and what is fiction? I decided to investigate this matter and was lucky to find several eager senior students to straighten out this whole mystic experience called "senior year".

Considering all the bad stuff we hear about clinicians, I thought it best to start investigating this first. Twila Seefeldt Robb stated, "Don't expect to go home at night and don't have any preconceived notions or attitude when you come down here". Mark

Troxel agreed about that point and further added, "Don't have a bad attitude towards certain clinicians just based on what you have heard about them. Because, until you actually work with them, you have no clue. There was one clinician that I really didn't think that I would get along with and thought that it was going to be awful, but, in reality, we got along great and it was really fun working with that person." Roxanne Fish added to the question about clinicians by stating, "Everybody has bad days including clinicians and other students. You should not take it personally because the frustration is not directed at you. If you do take it personally, your rotations are going to be really awful." So the best advice is to come into your senior year rotations with an open mind and not everybody is as bad as rumor may have it.

Mark Troxel's other advice when asked to comment about senior year was to work hard, read a lot, and that it is not impor-

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