

Obesity: Are we Doing Enough?

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Obesity is a common problem in pet dogs and cats. Estimates of the prevalence of obesity in dogs and cats vary from region to region and study to study, there is however little doubt that obesity is the most common nutritional problem seen in small animal practice. A variety of medical conditions have been linked to obesity including diabetes, skeletal problems, hepatic lipidosis, and high blood pressure. In addition, obesity tends to be a disease that becomes more prevalent with age. Aged pets are also more likely to suffer from concurrent medical problems such as endocrine disease (hypothyroidism, hyperadrenocorticism), cardiac disease (valve endocardiosis) and renal disease that may be influenced by the presence of obesity. Because obesity has such significant effects on the health of pets, it is vital for veterinarians and owners to be cognizant that being overweight is not just a matter of appearance. It is a significant health issue that needs to be addressed.

Diabetes

The link between obesity and diabetes mellitus in cats and humans has been convincingly demonstrated. Many cats have Type II diabetes or non-insulin dependent diabetes. Their pancreas still produces insulin, just not enough to maintain normal blood glucose. This is often a result of insulin resistance induced by obesity. The exact mechanisms underlying insulin resistance have not been elucidated, though resistin and leptin play a role. In overweight diabetic cats, weight reduction is an important management tool and in some cases can resolve the diabetic state.

Orthopedic problems

Whether obesity causes osteoarthritis is uncertain. It certainly is clear that increased body weight changes how osteoarthritis is manifested. Overweight pets are much more likely to show clinical signs such as lameness than normal weight dogs. Weight loss in dogs with hip dysplasia significantly improved their clinical condition. Another factor that should be remembered is that obese animals are much less exercise tolerant. This means that they have a harder time maintaining muscle mass. With surgery or trauma a prolonged recovery period is to be expected in overweight animals.

Hepatic lipidosis

Hepatic lipidosis is a complex disorder. Many diseases have been associated with the development of fatty liver in cats. One consistent finding is that it predominantly affects overweight cats that lose weight rapidly. Not in all obese cats will this occur, however when it does develop it is a difficult disease to treat and a certain number of affected cats will die.

Blood pressure

Obesity is known to be associated with significant increases in blood pressure in humans and dogs. The genesis of blood pressure increases in obesity is incompletely understood with different mechanisms responsible for short term and long term effects. It does appear that the interaction of hyperinsulinemia, insulin resistance, hypertriglyceridemia, volume expansion, increased cardiac output, abnormal kidney function, and increased sympathetic activity all play a role in elevating blood pressure in obese dogs and humans. Dogs have been used for experiments that examined obesity related increases in blood pressure. The dogs generally were made obese by feeding a high fat (beef tallow supplemented) diet over a short period of time. This causes an increase in blood pressure of 20 mmHg or more. In healthy dogs, this increase in blood pressure is unlikely to have any significant health effects. Many older obese dogs also suffer from endocardiosis of the AV valves. Increased blood pressure means vasoconstriction and elevations in afterload. It may be that the increased workload from higher blood pressure could be a factor that would contribute to progression of heart disease in these patients. Obesity cardiomyopathy has been documented in humans.

Other diseases

The link between obesity and other diseases is suspected, though much work needs to be done to investigate this further. There is however little doubt that it is healthier to be of normal bodyweight than to be markedly overweight.

Diet restriction and life span

Dietary restriction has been shown to extend the lifespan of rodents. A recent study has shown that the same applies to dogs. Initially these dogs were used in a study that demonstrated a beneficial effect of dietary restriction on the development of hip problems. These dogs were then followed out to evaluate their lifespan. The control group had a mean body condition score (BCS) of between 6 and 7 out of 9. This would be considered overweight to heavy, certainly not markedly obese. In comparison the restricted dogs (fed 25% less

calories than the control group) had a BCS of between 4 and 5 which would be between slightly underweight to ideal. Median life span (age at which 50% of each group was deceased) was almost 2 years longer in the restricted group (11.2 years vs. 13.0 years).

Summary

Obesity in pets is a widespread problem. Obesity can directly cause certain diseases such as diabetes or elevated blood pressure. It can also be a significant factor in complicating the management of other disorders. Many owners are not even aware that their pet is overweight or of the health issues related to obesity. In the interest of the patient's health, it is imperative to counsel owners on the nutritional status of their pet. If the patient is overweight, objective information on the effects of obesity should be provided and a plan formulated to achieve a more ideal body condition. When owners are apprised of the fact that their pet is overweight and that this is something that could significantly decrease the quality of life of the pet, it has been my experience that owners are almost always willing to do what it takes to achieve weight loss. I also have been struck by the fact that almost universally owners are very happy to have instituted a weight loss program because their four-legged family member become much more active and playful.

References

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