

The Mastiff and the “Golden Years”

(Part 3)

By Robin M. Smith, DVM

In this third and final article in the series on the aging Mastiff, I will address gastrointestinal, neurological and behavior changes, plus a couple of other general areas. I think that everyone that owns a Mastiff knows that they are unlike any other breed, so my comments about aging at times are general and not necessarily breed specific. If I have encountered or heard of anyone encountering the conditions I discuss in the Mastiff, I will note that in the discussion.

Gastrointestinal Disease and the Aging Mastiff

Gastrointestinal (GI) diseases are common in the geriatric Mastiff and are very challenging to the veterinarian due to the vast array of clinical signs. Some common signs that suggest GI disease in our mastiffs are: vomiting, diarrhea, weight loss, loss of appetite (in a Mastiff?), behavioral changes, regurgitation, excess gas, difficulty swallowing and abdominal pain. As you can see, these symptoms can also be signs of diseases I have already discussed, such as kidney and liver disease, therefore, making GI diseases more challenging to investigate.

The first place to start when discussing GI disease is the mouth. Inflammation of the gums and dental disease is common in geriatric dogs. I have found that is not the case in most mastiffs, but I will discuss some of the problems that may occur. Symptoms of mouth problems may be halitosis (bad breath), excessive drooling (yeah, right), not wanting to eat, weight loss and pain when trying to eat. Luckily, since our mastiffs are large, the mouth can be examined without anesthesia. But if the mouth is painful, sedation may be required. All of the teeth should be examined as well as the gums. The pharynx/larynx should be examined as well, but since they are at the very back of the mouth, anesthesia is probably required even in the most cooperative Mastiff.

Malignant tumors of the mouth are common in older dogs, but again, I do not see them often in our mastiffs. Melanoma, squamous cell carcinoma and fibrosarcomas are the most common.

Treatment of the mouth would include having the teeth scaled and polished and checking the gum-lines. There are specialists in dentistry that can evaluate and perform procedures as root canals, to save teeth. Sometimes, all that is needed is a cleaning and post- dental antibiotics and most veterinarians perform these procedures. The reason the teeth are so important is because when there is inflammation of the gums, when a dog eats, it creates bleeding along the gum-line and this allows bacteria in the tartar and around the teeth to gain access to the bloodstream. For some reason, this bacteria likes to find a heart valve and sit on it causing heart disease down the road.

Common antibiotics I use are clindamycin and Clavamox. Using enzymatic and antibacterial mouth sprays can help prevent further problems. One I am particularly fond of is called CET spray because it works by enzymatic action and dissolves the tartar before it can build up. And of course, brushing the teeth will help.

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Treatment of mouth tumors involves obtaining a biopsy first to ascertain the type of tumor. Some mouth tumors respond well to surgical removal alone but others require radiation or chemotherapy also.

The esophagus is the next step on the GI tour. Adult-onset megaesophagus is fairly common in older dogs and I have encountered it with increasing frequency in the Mastiff breed. This is where the esophagus loses its ability to propel food down to the stomach and therefore dilates and food swallowed just sits there without moving. In many cases, there is no known cause, as I see in mastiffs. But in other cases there may be an underlying factor like, myasthenia gravis, lupus, hypothyroidism and post-GDV (gastric dilatation-volvulus) syndrome.

The most common symptom is regurgitation where undigested food is brought up. There may be repeated swallowing attempts. Weight loss will occur if it is bad enough. Sometimes coughing and having difficulty breathing will occur due to the aspiration of food into the lungs. Diagnosis is fairly easy by radiology. X-rays show the presence of a dilated air or fluid filled esophagus. Sometimes it is necessary to put dye down the esophagus to actually demonstrate how dilated it really is. Treatment will include treating for any associated disorders, like hypothyroidism is treated with thyroid hormones, but idiopathic megaesophagus is treated symptomatically by feeding multiple, small-sized meals from an elevated position. Diets that are gruel like are the best. Drugs that help to increase the movement of the esophagus are used, such as reglan and propulsid. Long term prognosis is poor though due to the high incidence of pneumonia.

Stomach disorders are not very common in the Mastiff breed. Ulcers are one typical problem, but I have only encountered ulcers in mastiffs as a result of aspirin therapy. For some reason, I find mastiffs very susceptible to aspirin and its associated problems. That is why I do not use the prescribed dose by weight but I use 1 adult strength regular aspirin(325 mg. Or 5 gr.) that is coated or buffered per 100 lbs.

Gastric dilatation-volvulus(GDV) is the most common GI disorder encountered in giant breed dogs, although I must say our mastiffs are not among the highest in incidence. GDV is where the stomach distends greatly and will turn on its axis cutting off blood supply. It is a life-threatening emergency. If you would like more information on GDV, see my web page and read under "My Mastiff Vomited". I advocate early surgery on all GDV's. I do not even pass a tube first, because of the high incidence of poking the tube through the stomach wall, since the stomach is stretched so far.

The owner will usually call and describe a dog that has a bloated abdomen, is pacing, uncomfortable, and trying to vomit but cannot bring anything up. Again, when presented with these on emergency, I always am very aggressive in my treatment and therefore, very successful.

Bowel disease is not common among our mastiffs, although it can be in a lot of other geriatric dogs. Inflammatory bowel disease where the intestinal walls are thickened due to allergy-type

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problems or whether due to cancer like lymphosarcomas is the most common inflammatory problem.

Although not necessarily a true gastrointestinal organ, one of the more common problems I encounter in mastiffs and older dogs in general, is splenic tumors or tumors involving the spleen. The spleen is actually an organ of the blood system that disposes of used up blood cells. In dogs, it also contains a large blood supply. About 50% of these tumors are not malignant and surgical removal of the spleen is curative. The other 50% are usually hemangiosarcomas, which are very malignant.

The symptoms associated with splenic tumors are varied. The most common presentation of a dog with a splenic tumor is that the dog has collapsed. It was previously normal and all of a sudden, it fell down and can't get up. As the splenic tumor grows, it stretches the capsule that surrounds the spleen and causes great pain because the pain receptors are in the capsule. If it stretches too much, the capsule will burst and allow massive bleeding to occur into the abdomen, which is a life-threatening emergency.

Diagnosis is by x-ray and ultrasound. Treatment is surgically removing the spleen. This can be a very expensive procedure in our mastiffs, because blood transfusions are often necessary.

Since we are discussing GI diseases, this would be a good place to discuss nutrition and the aging Mastiff. I don't usually discuss nutrition and diet due to the varied opinions on what to feed our mastiffs. I always say you can ask 100 breeders of mastiffs what to feed and you will get 120 different answers. Understanding how the nutritional needs of older dogs may change and a thorough evaluation of the individual Mastiff will help allow for an appropriate dietary recommendation. Older mastiffs tend to have reduced energy needs. If caloric intake is not adjusted accordingly, weight gain will result.

Healthy mastiffs usually do not experience a significant age-related decline in their ability to digest and absorb nutrients. If the Mastiff is generally healthy and consuming an appropriate diet, a dietary change is unlikely to be needed. When necessary, dietary changes should be based on the needs of the individual Mastiff and the medical needs. While it is true that many aging changes, such as loss of flexibility, loss of muscle and nerve cells, and decreasing ability to survive stress, are progressive and irreversible, nutritional management can assist in delaying or preventing the development of many age-related pathologic changes. The nutritional management is very specific to the problems occurring or that are likely to occur in our aged Mastiff and need to be discussed one on one with your veterinarian who is familiar with your dog.

You should always be aware of drug/nutrient interactions that may influence dietary intake or nutritional requirements. Lasix, a drug used to get rid of excessive fluid may increase the need for potassium, magnesium and calcium. Also, many medications result in anorexia.

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Obesity is a common problem in our mastiffs as they get older. Obesity related problems include musculoskeletal problems, compromised immune function, abnormal glucose tolerance, anesthetic and surgical complications, heat and exercise intolerance and complications from cardiovascular disease and other diseases.

As in humans, dieting is very difficult. Almost any nutritionally complete diet can be used for weight loss, because the key, as in people, is to reduce calorie intake below calorie expenditure. Nevertheless, there are some advantages to the use of diet dog food that is specifically formulated for weight reduction. Low calorie, high fiber foods provide normal levels of protein and other nutrients while decreasing fat and calories. The fiber in these also may provide a satiety effect or feeling of fullness.

Supplements that have been recommended in geriatric dogs include vitamin C, CoEnzyme Q, and L-carnitine which can help enhance immune function, improve overall physical performance and reduce the incidence and severity of age-related illness. It is also recommended by some to increase the intake of unsaturated fatty acids and zinc to maintain healthy coats and skin. These essential fatty acids also have an anti-inflammatory effect and can help with arthritis and joint problems.

Neurological Disease and the Aging Mastiff

The most common neurologically associated problem I see in older mastiffs is associated with pressure on the spinal cord. Due to aging and the size of our mastiffs, they tend to develop degenerative disease in the bones of the vertebral column. Sometimes, this can cause a weakness and create instability in the backbone and cause varying pressure on the intervertebral disks. If these disks push upward they can cause varying degrees of trauma to the spinal cord. I see this throughout the whole spinal cord in our giant breed dogs, from the neck to the lower back.

The symptoms of a neck problem would be hind limb incoordination, or ataxia. The dogs walk like it is drunk in the rear end. They may drag their back feet and you may notice that the tops of their back feet are worn and the toenails are worn. It can progress to affecting the front legs also causing them to walk very stiff legged. Sometimes, neck pain may be evident, but I have found that in our mastiffs, neck pain is hard to elicit because of their heavy musculature.

The thoracolumbar spine is the next area that can be affected. This is the mid-back. Signs of this can vary, but you may see weakness in the back legs. The dog may have muscle wasting in the hind end. They may be uncomfortable sitting down. Sometimes, there is pain.

Depending on the severity of the problem depends on how I recommend treating these conditions. Whenever possible, radiographs should be obtained. This is to rule out any other cause, as in diskospondylosis (infection) and cancer. Bloodwork should also be obtained, for the reason that treatment may involve steroids and these drugs can affect the liver. I like to have pre-steroid bloodwork on hand.

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If the cases are mild, I will suggest cage rest and treatment with antiinflammatories, like aspirin or rimadyl. If more serious, I may use steroids, like prednisone for a short period of time and wean the dog off of them slowly.

If the dog in worse condition or is not improving, I will refer the dog to a neurologist who then can perform a myelogram, where dye is injected into the spinal canal to see exactly where the problem is occurring. This would require general anesthesia. Sometimes, the neurologist would rather do a MRI or include one with the myelogram.

Surgery is an option in severe cases or cases that are not resolving with medication and time. I have to be honest with you on this one, in that I am not sure that surgery is the best choice in our aging mastiffs. If it is a young Mastiff, I think it can be good. But, in the older Mastiff, I think that back surgery is a very hard thing for them to recover from. I suggest alternative therapies in the older Mastiff, i.e. acupuncture and holistic approaches. I have already discussed these alternatives in part I under musculoskeletal conditions, so will not discuss them here.

The next most common neurological problem I see in older mastiffs is seizures. In the geriatric dog, seizures can be the result of metabolic diseases, a tumor of the brain, or a vascular condition of the brain where the blood supply has been interrupted (as a stroke in humans). Once metabolic diseases are ruled out by laboratory work, the only way to accurately diagnose the other two conditions is by CT scan or MR imaging.

If the CT scan or MR imaging is not pursued, I will put the Mastiff on phenobarbital to try and control the seizures. Sometimes, Potassium Bromide is needed also.

Another common condition I encounter in geriatric mastiffs, but not as common as in other breeds, is called canine geriatric vestibular disease. The dog presents with a sudden onset of a severe head tilt, falling over and sometimes circling. A severe inner ear infection can also cause this and should be considered as a rule out. The good thing is that generally the dog gets better in 1-2 weeks without specific treatment.

Behavioral Problems and the Aging Mastiff

As our mastiffs age, certain types of behavioral problems can arise. The more common geriatric-onset behavioral problems are collectively termed "cognitive disorders" (CD). Included in this broad category are behaviors such as: decreased interest in food (our mastiffs??), house soiling, incontinence, decreased ability to recognize commands, places, people or other animals, generalized apathy, weakness or disorientation, disruption of sleep-wake cycle, circling, repetitive disorders, persistent vocalization, decreased tolerance to being left alone and tremors or shaking. Having only one of the above behaviors can classify the dog as having CD.

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For each behavioral problem, a clinical history, physical examination, and diagnostic testing will be needed to determine whether there is an underlying medical problem that could be causing or contributing to the behavior.

There are many medical conditions of geriatric mastiffs that can manifest themselves as behavioral changes. Listed below are a few of these:

Condition Behavioral Change/Problem

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|---|---|
| 1). Less sensitive to thirst | Constipation which may lead to inappropriate defecation |
| 2). Decreased metabolic rate/obesity | Leads to decreased mobility, which may lead to inappropriate elimination or increased possessiveness |
| 3) Thermoregulation capacity reduced | Decreased ability to tolerate temperature changes, therefore less desire to go outdoors. Increased panting |
| 4) Increased dental disease and oral | Pain, irritability, aggression, loss of appetite tumors |
| 5)Decreased respiratory capacity, reduced oxygen to brain and other tissues | Nighttime confusion, decreased exercise tolerance |
| 6) Decreased kidney function, anemia, Inadequate sphincter control | House soiling |
| 7) Degenerative joint disease | Weakness, decreased mobility, pain |
| 8) Decreased sight/smell/hearing | increased fear, aggression, decreased appetite, increased vocalization, change in sleep pattern, startle to stimuli |

So, as you can see, there may be an underlying age change or medical condition causing a certain behavioral change.

After making the diagnosis and determining the cause of the problem, behavior modification, environmental modification and drug therapy can be utilized to work toward a successful control or correction. This is not an easy field of veterinary medicine. I encourage you to discuss this with your veterinarian before attempting any changes.

Drug therapy is a viable option. There are new drugs on the market approved for animal use in these conditions of "cognitive disorders". The two that I am familiar with are clomipramine (Clomicalm) and Anipryl. Anipryl works by enhancing brain dopamine concentrations while clomipramine is an antidepressant. I have used both of these drugs with success but do not have a lot of experience with them in the Mastiff. One thing to keep in mind that I have discovered with a lot of medications and the Mastiff, is that just because they are giant breed dogs, sometimes the

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dosage of the drug needs to be carefully decided and not given based on weight alone, to avoid overdosage.

The Urinary System and the Aging Mastiff

Incompetent sphincters are a common cause of urinary incontinence in our older female mastiffs. The most common sign is urinating during sleep. The dog wakes up with a puddle of urine under them. Of course, a urinalysis should be obtained to rule out a urinary infection or other problem first. If all is fine, then I will use phenylpropanolamine daily to control this. Sometimes, the drug can be given only 2-3 times weekly. Phenylpropanolamine is a fairly safe drug, but it also increases metabolism and heart rate and should be used very cautiously, if at all in the Mastiff with heart problems.

Prostate problems are common in our older male mastiffs, especially intact dogs. I encourage neutering to help prevent these problems. As the dog ages, the prostate will naturally enlarge and hypertrophy and this is normal. But, neoplasia or cancer of the prostate is more common in the intact male. The prostate will become very large and can press on the urethra causing urination to be painful or for the dog to dribble. Infections of the prostate are also common in intact older males and these can be very serious if not detected early. Infection is the most common problem I encounter in intact Mastiff males, old or young. Diagnostically, I will obtain a prostatic wash sample and a urinalysis and by culture and sensitivity will put the dog on antibiotics for up to 8 weeks. Prostatic infections can become so severe that they can spread to other areas, such as the joints of the leg or the back. Whenever I encounter a male Mastiff with swollen joints or bone infections, one of the first things I look at is the prostate.

Anesthesia and the Aging Mastiff

I have included this section because many of the protocols involved in diagnosing certain conditions or in treating certain conditions of the aging Mastiff require anesthesia. The goals of anesthesia and the geriatric patient are to 1) keep the anesthesia time to a minimum, 2) use anesthetic drugs that have the least effect on the heart, and 3) maintain adequate kidney function.

Having anesthetized many mastiffs, I will give my protocols when anesthetizing an older Mastiff. But, to be honest, I use these protocols even on young mastiffs, because I find them to be much better in giant breed dogs, no matter what age.

I pre-medicate with valium and Butorphanol. I use .2mg/kg of each and give it intramuscularly about 15 minutes prior to surgery. I always have an intravenous (IV) catheter in the front leg and the dog is on fluids during the surgery. I then will give Propofol to effect. In other words, I give it slowly until I can put the endotracheal tube down the trachea to be hooked up to gas or Isoforane. If the Mastiff is a heart patient or is really sick, I may use Oxymorphone and valium to induce (anesthetize enough to put a tube down). Or there is versed, another drug that I use a lot

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in older dogs. I always will hook them up to an ECG to monitor the heart and to a pulse oximeter to monitor the oxygenation.

One thing you will notice is that I do not pre-medicate with Atropine or Glycopyrolate unless I feel it is necessary. I may use the drugs, but only when indicated.

With this protocol, the Mastiff will wake up very quickly. As you noticed, I do not use Acepromazine which many veterinarians include in their anesthetic regimen. Acepromazine is a very potent drug and I find that in our giant breed dogs, its' effect is very profound and long lasting. I do not advise its use. I do not advise the use of Rompun or Dormitor either, as each has again, a profound effect on our mastiffs.

I have used ketamine and valium mixtures, which have worked well in younger mastiffs. Again, I would not use them in the older Mastiff. Telazol is another drug I have used often in younger mastiffs, but would stay away from in the older Mastiff.

Talk to your veterinarian about the procedure and the anesthetics that will be used. The most important thing is that your veterinarian is comfortable anesthetizing a giant breed dog.

Summary

Our mastiffs are a great and noble breed. Unfortunately, because they are giant breeds, their life spans are shorter than we would like. I hope that I have enlightened you on the many changes that occur in our older mastiffs and the things that you can do to help keep them healthy as they age. I do believe that we are doing wonderful jobs taking care of our mastiffs as I see many of them at 13 and 14 years of age. I wish I could see them all reach that age with dignity. Helping our mastiffs age gracefully is the most wonderful adventure and the unconditional love we get from them can never be equaled.