

# **“My Mastiff Threw Up...Should I Be Worried?”**

## **(When and Why You Should Call Your Vet)**

### **By Robin M. Smith, DVM**

One of the most common questions I get while on duty at the veterinary emergency hospital and from fellow Mastiff lovers is, "My Mastiff vomited, but he is acting okay otherwise; what should I do?" The following article will offer some suggestions for at-home measures to relieve vomiting, and then I will try to cover the most common causes of vomiting that I see in the emergency situation: pancreatitis, kidney disorders, hemorrhagic gastroenteritis, obstruction, and gastric dilatation and volvulus.

Because vomiting is a clinical sign and not a diagnosis, a thorough history is needed. One of the first things I need to know is whether the dog is actually vomiting or not. Regurgitation is often thought to be vomiting. Regurgitation is the passive expulsion of a food bolus from the esophagus. It involves only the gag reflex, while vomiting is a reflex act that results in the forceful expulsion of gastric contents through the mouth. Many dogs will regurgitate after eating fast and gulping food. But vomiting should not be a common occurrence. A one-time vomiting incident is nothing to get alarmed about. When a dog vomits several times, however, I get concerned.

#### **When to Call the Vet**

The first thing to do at home is to withhold food and water for 12 hours. This is because any intake will stimulate the gut and cause vomiting again ... so take away the water and food, but only if your dog is acting fine in every other way and is not dehydrated. If you are not sure, call your veterinarian. If the dog keeps vomiting after withholding water, take it immediately to the veterinarian.

If no vomiting occurs in 12 hours, then you may give some ice cubes followed by water. If no vomiting occurs, then give a small amount of a bland diet. A bland diet consists of boiled hamburger or white chicken and white rice. If the dog vomits, stop all oral intake and call your veterinarian.

When you take your Mastiff to the veterinarian for vomiting, the veterinarian will ask you the dog's history: did the dog get into any "people food" or garbage, get exposed to poisons, etc. Please mention any change of dog food and any change in behavior. And if you know that some of the dog's toys (such as "bones," etc.) are missing, please let your veterinarian know.

When describing your dog's history, please also tell your veterinarian if you have given the dog any drugs, such as aspirin. Aspirin can cause a severe gastric disease which can lead to vomiting. I once had to do an emergency surgery on a Mastiff that had been given one aspirin for pain. The aspirin caused a stomach ulcer and perforated (tore a hole through) the stomach, and surgery was done to stop the bleeding and repair the hole in the stomach. So, please do not give any medication, prescription or not to a dog unless you understand the side effects.

After obtaining the history, the veterinarian will perform a complete examination. I always look inside the mouth and examine the teeth and gums and back of the throat. I examine the neck and the chest. I find out if the dog has had any diarrhea. And I palpate (or feel) the abdomen.

If the dog is not painful in the abdomen and is not dehydrated, I may consider treating the dog on an outpatient basis. I will handle this conservatively, especially if there is a history of changing dog foods or the dog getting into the garbage. I will give the dog an injection to help calm the stomach and instruct the owners to keep the dog off food for 24 hours, then give ice cubes. If no vomiting occurs, they can give water and then gradually introduce a bland diet. This is considered a simple gastroenteritis.

More than likely, if the dog can be treated on an outpatient basis, the animal will be back to normal in 24-48 hours. But if during the examination there is any evidence of abdominal pain or dehydration, I will recommend bloodwork and x-rays.

### Pancreatitis

Among the things I am looking for in the bloodwork is an increase in the pancreatic enzymes and the white blood cell count. If I see an elevation of lipase, cholesterol and glucose, I will diagnose a pancreatitis and obtain radiographs. I get radiographs to rule out other causes of vomiting such as a foreign body which can cause a secondary pancreatitis. The x-rays of a dog with pancreatitis will more than likely be normal, or there may be a hazy appearance in the area of the pancreas.

Pancreatitis occurs when the pancreas has been overstimulated and is producing excess enzymes. These enzymes will start to digest the pancreas itself and create havoc in the body.

Pancreatitis is one of the most devastating diseases I see. Once the pancreas gets so inflamed, it starts sending out particular molecules that affect the rest of the body, even the heart. While an inflamed pancreas in itself is not terribly serious, its secondary effects can cause so many complications, such as kidney failure and heart arrhythmia's (abnormal heartbeats).

Once a diagnosis of pancreatitis has occurred (depending on its severity), there are several things that can be done. I always put an IV catheter in the dog in order to administer intravenous fluids. The dog **MUST** not take anything by mouth for at least 24 - 48 hours. So we start the dog on fluids and antibiotics. Sometimes we also have to administer plasma in order to keep up the animal's protein level. Usually this only occurs in the severely affected cases.

We also must give the dog some types of medication to keep them from vomiting. After 48 hours, if there is not vomiting, we will give ice cubes, followed by a bland diet. If the vomiting continues, we will have to consider parental feedings. This is a mixture of amino acids, fats and carbohydrates that is mixed together and fed through the IV line providing full nutrition to the pet.

All of this can be very expensive. To hospitalize a Mastiff for pancreatitis and to feed it through an IV line can be as much as \$500-\$1000 a day. But, pancreatitis can be a very devastating disease.

## Kidney Disorders

Kidney disease is another common reason for vomiting. It's possible that the bloodwork taken during examination may show an elevation of the kidney enzymes. When the kidney starts to fail, the enzymes will increase in the bloodstream and can cause stomach ulcers. If this becomes the case, then the mainstream of therapy would be fluids to dilute the enzymes and bring the values back into normal range. This can take many days of intensive intravenous therapy with monitoring of electrolytes. Sometimes, we repeat the kidney function tests in 48 hours, but usually we do not see too much of a change (of course, that depends on the cause) for one to two weeks after therapy.

Does this mean the dog should be hospitalized for two weeks? Not usually. Once the dog is eating and not vomiting, we send them home and recheck them in one to two weeks. We need to discover the cause of the kidney failure, so I will often ask to perform a kidney biopsy. We use an ultrasound-guided biopsy technique that is much safer than the older blind techniques.

Sometimes, the IV fluid therapy does not work and we must do some peritoneal lavage. During this procedure, a long catheter is placed into the abdomen, allowing fluid to go in; the fluid sits there a certain designated time and is then removed. This hopefully will decrease the kidney enzymes.

If all else fails, we will recommend sending the dog to a referral center for hemodialysis. As you probably are already aware, this is very expensive, especially for a Mastiff.

## Hemorrhagic Gastroenteritis

I see a lot of hemorrhagic gastroenteritis in emergency situations. The dog presents with sudden onset of vomiting blood and will have bloody diarrhea that is described as 'jam'. We are unsure what causes this condition, but fortunately -- with early treatment -- the prognosis is good. The hallmark of diagnosis is an elevated hematocrit, which tells us about the hydration status. It is usually very elevated.

Death can occur without treatment. Treatment consists of intravenous fluids and sometimes plasma for a period of one to two days along with antibiotics.

## Obstruction

Another reason for vomiting can be an obstruction. Usually the dog will continuously vomit, the vomiting can be very forceful at times, and the abdomen is painful. Rawhides and bones are common causes of obstructions. I have also removed blankets and cassette tapes from animal intestines. If your Mastiff undergoes a surgical procedure for removal of a foreign body, the time required in the hospital will depend on whether intestines were removed or not. If not, the recovery time will be just a few days. If intestines were removed, recovery time can be up to a week. The problem with intestinal surgery is that any time the intestines are even touched, they will stop working and a condition called "ileus" can occur. This condition causes the intestines to stop working and accumulate gas and fluid, and this can be extremely painful. To keep this from happening, certain drugs such as reglan are used, which stimulate the movement of intestines. Again, IV fluids and antibiotics are the mainstay of treatment for any intestinal surgery. Costs can run anywhere from \$1500 in uncomplicated cases to \$4,000 in complicated cases.

## Gastric Dilatation and Volvulus

But of these aforementioned conditions, perhaps the big fear of all Mastiff owners is gastric dilatation and volvulus. This is when the stomach distends with food or gas and can then twist on its axis. This will cut off circulation to the intestines and the spleen, and it is a serious, life-threatening condition. The dog may try to vomit, but bring up only foam. The dog will be very uncomfortable. The abdomen will be very distended or swollen. If this happens, take the dog to the veterinarian immediately. This condition is a race against time.

When presented with this type of case, the veterinarian will immediately get a x-ray to determine whether the stomach is turned or not. The current thinking is that no matter what is happening, you should open the dog up and inspect the insides. Even if the stomach is not twisted, it will put so much pressure on the rest of the organs and blood vessels, that the circulation is cut off and one cannot assess the organs unless surgery is performed. I will always have some blood on hand when I do these surgeries because many times the spleen is involved and may need to be removed, and a lot of bleeding can occur.

When a dog is brought into my emergency clinic with gastric distention and the dog is in shock, I may forgo the x-ray, because no matter whether the stomach is twisted or not, I am going to advise surgical exploration. I may relieve some of the pressure by putting a 16-gauge needle into the stomach to let out air. I do not remove all of the air; in fact, I only remove a small amount, because it has been shown that removing the air too quickly (called decompression) can actually make matter worse. You would be opening up the circulation, and all of the toxic substances that have built up would now be released into the systemic circulation, which will add to the shock state.

I put an IV catheter in the front leg, and preferably will use 2 catheters. In a Mastiff, I will use the largest catheters that I have, which would be 14-gauge. I immediately start a balanced electrolyte solution, like lactated ringers, and give it at "shock rate" to help keep the blood pressure up. For a Mastiff, shock rate can be anywhere from 10,000 ml. of fluid to almost 20,000 ml. of fluid. Yes, that is a tremendous amount. That equals anywhere from 10-20 one-liter bags of fluids!

I generally will put in enough fluid to increase the blood pressure to normal. This can be just a few bags to 10 bags. That is why I monitor blood pressure, so I can know when to stop. Plus, if there is any bleeding inside the animal from a twisted spleen, you can actually increase the amount of bleeding, due to giving to many fluids. So, as you can see, there is a delicate balance.

I NEVER pass a stomach tube, due to the fact that the stomach is so distended and stretched and the walls of the stomach are very weak... and by passing a tube, it can easily puncture through the stomach and cause more of a problem. I cannot tell you how many times I have had to do emergency procedures on an animal in which the regular veterinarian passed a stomach tube ... and then I did surgery on the animal and found a ruptured stomach. I know there are many veterinarians who do pass stomach tubes because that is what we were taught. There probably are some cases where it won't hurt, but I would sure monitor the pet for several days after the procedure. I guess I just see so many "bloats" that I see a lot of complications, and I have just become comfortable with immediate surgical exploration. I would rather have a live dog after an

uncomplicated surgery than a dog that is dying due to tissue death several days down the road, when I can't do anything to help it.

Bloodwork is drawn at this time and the dog is sedated. I draw blood because I want to know about any pre-existing conditions and how severe this condition is already. After sedation, I put in an endotracheal tube and put the dog on isoflurane (a gas anesthetic). We then very quickly prep the dog and take it to surgery. From the time the dog comes into the door to when I can usually get it on the surgery table is about 45 minutes. Some cases, I have actually had to wait longer so I could stabilize the animal before taking it to surgery.

Once in surgery, I will stick a large-gauge needle into the stomach to relieve the distention. Then I will derotate the stomach back into normal position. I assess the stomach wall to see if any part of it is dead or necrotic. If I can't tell, I will sometimes place the pulse oximeter (an instrument that measures oxygen flow) on the area to assess, or I may inject a fluorescein dye into the vein and see if the vessels in the area of question show the dye (which would mean the area is okay). If there is a possibility of tissue death, then I remove what I can of the area. I have removed approximately 1/2 of the stomach and had the dog survive. The prognosis with having to remove part of the stomach is definitely very guarded. I may open the stomach and flush it out, or I may pass a stomach tube at this time and rinse out the stomach. I then will assess the spleen. I sometimes have to assess the spleen first because it is torn and bleeding and requires immediate removal. If there is any trouble getting the stomach derotated, I will remove the spleen also. I then will examine the whole intestinal tract and the rest of the organs, looking for possible obstructions. Then I do my preventative tacking of the stomach. There are several ways to do this and each one has its own benefits. Finally, I close the abdomen.

After surgery, the most critical time is the first 48 hours. This is when we can get serious sepsis (infection) and heart abnormalities. We monitor the dog on an EKG. We also monitor the total protein, the platelet count and the glucose and albumin, as well as the dog's temperature. We are monitoring for any signs of drops in protein (albumin) or glucose or platelets, which would indicate a serious infection. If we can prevent this from occurring, we are one step ahead.

Depending on what was done at surgery, recovery time can be anywhere from a couple of days to a week. Costs of this type of surgery and treatment in a Mastiff will run from \$1,500 in an uncomplicated case to \$4,500 in a complicated case.

Due to the advancement of critical care facilities for animals, we rarely will lose a pet to GDV. But, in order to give the dog the best chance, the owners must be committed to doing all possible and must have trust in the facility treating the pet. If you ever find yourself in an emergency facility and faced with a decision of treating or not, ask a lot of questions and demand full answers to your satisfaction. You need to know the risks as well as the benefits of all treatments. I advise going to your local emergency practice and getting to know them prior to having to utilize them. This way you will be much more comfortable with the caregivers there.

#### The Diarrhea Factor

Many times diarrhea occurs in our Mastiffs. As diarrhea can be from dietary indiscretion (eating

something they shouldn't have eaten), from parasites, or from any of the disease processes listed above, it is worth discussing briefly at this time.

If diarrhea occurs once and I get a call from an owner and the dog is otherwise fine, I may suggest keeping the dog off food for 24 hours as I did above for the vomiting dog, then gradually introduce a bland diet. I may have the owners give Pepto-Bismol for the one-time diarrhea case in the otherwise healthy dog. I use about two ounces for a 100 lb. dog or 4 ounces for a 200 lb. dog.

But if the diarrhea recurs or does not improve, I want to check the animal. I will check a fecal first, both a direct and a flotation, looking for parasites. A common parasite that is overlooked is Giardia. It can easily be diagnosed on a direct fecal exam. Roundworms, hookworms and whipworms, along with tapeworms, can all cause diarrhea and are easy to clear up.

Once diarrhea occurs and continues to occur, the dog will develop what is called bacterial overgrowth. This is when "bad" bacteria, namely clostridium, overrun all of the normal bacteria in the gut. I see this condition many times in our show dogs that are on the road and get diarrhea due to stress. When this occurs, no matter what the original cause is, the dog needs to be treated for this bacterial overgrowth. I commonly use metronidazole or generic flagyl at a dose of 50 mg/kg once a day for five days. Another common drug I will use is amforal. Amforal has an ingredient that coats the stomach and intestines; an ingredient that slows the gut down (stops cramping), and also has an antibiotic that stays in the gut. I use the bottle dosage for 48 hours. If after 48 hours the dog still has diarrhea, then I do some additional testing.

A complication of diarrhea and vomiting is intussusception. Due to the force of vomiting; the intestinal tract can "telescope" onto itself, causing a serious obstruction that needs immediate surgical intervention. The signs that this may be occurring are that the dog becomes very sick quickly -- so sick that it may not even be able to get up. Diagnosis is sometimes difficult, but x-rays and ultrasound can help with the diagnosis.

A common procedure done on vomiting pets is a barium swallow. Dye (barium) is given to the dog and x-rays are taken at different times to see the dyes transit time through the intestines. Foreign bodies and intussusception can be diagnosed this way. Most of the time, I find that the barium doesn't always give me an answer and if the dog continues vomiting, surgical exploration may be the only answer. I would rather do a surgical exploration on a healthy hydrated dog and find nothing, than a dog that is sick and going downhill when surgery is more of a risk. At least one can get biopsies and get a good look at all the organs.

One more cause of vomiting and diarrhea in our Mastiffs -- particularly in puppies -- is parvovirus. This can be a very devastating disease, but with aggressive and intensive treatment, most dogs can survive. The mainstay of treatment is fluids, plasma and antibiotics. The length of treatment depends, but can be two to seven days of hospitalization.

There are a lot more conditions that cause vomiting and diarrhea, but I hope that I have covered the major ones that I see. The important thing to remember is to not wait too long to get your dog to the veterinarian; the dog must be seen before it gets severely dehydrated. Signs of dehydration

are sunken eyes, dry mucus membranes (like the gums) and tenting of the skin (the skin on the back of the neck staying tented when pinched, instead of immediately going back into place).

Conclusion If you know that the dog got into something or you changed its diet, you can probably wait 24 hours to see if the vomiting and diarrhea clear up, but only if the dog is fine and not lethargic, etc. You must withhold food for 24 hours and gradually start a bland diet. If at any time the dog becomes worse or does not respond, please see your veterinarian. I do not use many of the antidiarrheal medicines because these medicines can also make the dog lethargic, and it is difficult then to know when the dog is getting worse. The best way to stop diarrhea is to figure out what is going on and to treat the cause, not necessarily the diarrhea. BUT, if you don't know why the dog is vomiting or if it occurs more than once, please at least call your veterinarian and see if you should take the dog to be examined. I would rather see a dog early and not have to worry, than to see a dog that is already dehydrated and sick.

If I can be of assistance to any of you, please contact me. I am always available to help a Mastiff.

I would also like to take this time to thank Nelma Kramer, a veterinary assistant whom works with me at Westminster Veterinary Emergency Trauma and Critical Care Center, for doing a great job taking the pictures for my last article and this one. She also did all of my pictures for my presentation at the National Specialty. I cannot thank her enough.

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