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Twisted Inside

Bloat is among the most terrifying canine ills, but quick action can save the life of a stricken dog.

By Matthew Schenker

Barbara Lee Williams recalls one of the first times she competed with her beloved German Shepherd Dog Red in the 1960s: "After we all went around with our dogs, the judge told me to take him and go over into the corner and wait. I was worried, and didn't know what this was about. We watched all the other dogs go around again. Then the judge asked me to take Red and circle one more time. The judge said to everyone, 'I want all of you to take a good look. This is what a German Shepherd is supposed to move like.' That's the way I remember him."

Red became one of the country's top-winning GSDs, and Williams received regular requests from people wanting to breed their bitches to him. "He had absolutely beautiful movement," she says, "and outstanding temperament. And all his offspring were the same—just phenomenal." Williams and Red were the center of attention at every show they attended.

An Unforgettable Look

Late one night, when Red was 9, his abdomen suddenly swelled and he got a stricken look in his eyes. "Once you see that look, you'll never forget it," Williams says, her voice trembling even 20 years later. "It's like they know they are going to die. You see dogs get hurt sometimes while they're playing. This is different. They stand in a strange manner, with their heads down. They start retching like they want to vomit, but can't. They try to listen to you and follow your commands, but they just have this hopeless look. They are in sheer pain."

Williams raced down a California freeway to the nearest veterinary hospital, at the University of California-Davis. There, veterinarians told her that gases had built up rapidly in Red's stomach, making it swell to more than double its regular size. He was suffering from the dreaded, potentially deadly condition called bloat.

Inserting a tube along Red's esophagus into his stomach released the gases. He had made it through this ordeal. But the vets told Williams that it was almost certain Red would have another episode. And he was highly susceptible to torsion, in which the stomach not only swells, but twists, literally wringing itself.

Susan LaCroix Hamil, an AKC Delegate and board member of the AKC Canine Health Foundation and the Orthopedic Foundation for Animals, is a registered veterinary technician in Laguna Beach, California, and breeds Bloodhounds, a breed highly susceptible to bloat and torsion, also known as gastric dilatation-volvulus. "Imagine what kind of pain the dog is going through. It's like the

stomach is a full balloon twisting on either end and squeezing the air against its sides with incredible force. It sets off a cascade of other reactions, compromising the heart, spleen, nerves, and sends the dog into shock."

Williams returned home with Red, but their life together was never the same. "I wanted to make sure I was there if this ever happened again. I slept at night with his lead around my shoulder, so if he moved, I'd move. When my husband and I went to the grocery store, one of us sat in the car with Red. If we came out and the car was gone, it meant Red had bloated."

Within two years, Williams again found herself racing down the California freeway. This time, Red had bloated and torted. She got him to the hospital in time for emergency surgery, but he died on the operating table.

For more than 30 years, Sherry Wallis has been breeding Akitas, who also have a high incidence of bloat and torsion. The condition is the number-one cause of death among male Akitas and number two in females. Wallis has seen it strike her own dogs, and has learned to notice the warning signs—unproductive vomiting and a glassy-eyed look. "The minute I see that, I get into the car and race to the vet. I don't worry about overreacting."

Hamil says surgical techniques have vastly improved in recent years, to the point where about 80 percent of torsioned dogs can be saved. Surgeons try to reset the stomach, then use special tacks to attach the stomach to the chest, which prevents it from twisting again, a procedure known as gastropexy.

This reduces the chance of future episodes by about 85 percent. Some breeders are using this surgery as a preventive on all their dogs. Hamil says there is one catch: "You have an hour or two to get to the hospital and begin surgery."

Treatment can be costly. Linda Bell, of PetPartners, Inc., the exclusive provider for the AKC Pet Healthcare Plan, says that PPI routinely sees bloat claims of \$2,000 to \$3,000. "The urgency of the situation leaves no time to think about anything else, like How can we afford the potential surgery?" she says.

What Can Stop It?

For decades, owners with dogs prone to bloat and torsion followed a set of standard preventive measures. In 1998, Lawrence Glickman, VMD, professor of environmental health at Purdue University School of Veterinary Medicine, began testing the conventional wisdom.

"I was amazed that, while bloat is a significant cause of mortality in many breeds, there had been very little research done to look at causes. It was also clear we couldn't study the animals in the laboratory. We had to study them in their natural environment."

In the initial phase of his study, Glickman and his research assistants measured 1,940 dogs. "I went to about 26 shows in about 20 states over two years. This was the only way I could evaluate the dogs in a standard and systematic way." He measured body type, assessed temperament, and collected other facts from owners.

He then tracked the dogs for three years, taking careful measurements. "For the first time, we had numbers to actually show what percentage of dogs in various breeds bloated. It was astronomically high for some breeds, where nearly 40 percent of them bloated at some point."

Glickman's findings shocked the dog world. It revealed new ways to prevent the condition, and that some standard advice may be harmful. It was a common belief, for example, that drinking large volumes of water with meals and that exercise before and after meals were dangerous. Glickman found these to have no effect.

Another long-held belief was that stress, or general unhappiness, contributed. Glickman's findings showed no link. "We asked people what their dogs did right before they bloated. We also measured temperament. Then we found people with dogs of the same breed, age, and temperament, but had never bloated, and asked them the same questions. The list was exactly the same."

People had long believed that bloat-prone dogs should be fed from elevated food bowls. "We found that not only was this untrue, but it actually increased the risk by up to 200 percent," he says. "It's especially important for people to know when something promoted as preventive turns out to be detrimental."

Most surprising were Glickman's observations about the role of food. "We found very consistently that dogs eating only dry food had higher risk of bloat," he says. "It didn't matter whether the owners added canned food or table scraps; as long as it was not dry-food-only, the risk went down."

Investigating veterinary records back to 1965, he noticed a pattern: Dogs began dying of bloat and torsion at an accelerated rate in the latter half of the 20th century. Glickman believes the problem started in the 1980s, when pet-food companies switched from baking to a process called extrusion, in which hard pellets are formed by forcing ingredients through a high-pressure machine. Glickman theorizes that these pellets are harder to digest and expand in the dog's stomach.

Dorothy Laflamme, DVM, Ph.D., senior pet-nutrition scientist at Nestlé Purina, says the extrusion-bloat connection has not been proven, and cites smaller studies that have shown no link. "Based on the data, there is no true association between dry foods and bloat," she says. "In the early 1980s, companies introduced high-calorie, 'super-premium' foods. If anything, that would be

beneficial."

Glickman does not advocate removing all dry food. Instead, it is better to feed more meals per day. "More, smaller meals means less food going into their stomachs each time," he says. Laflamme agrees, emphasizing that it is not the food itself, but eating habits. "Feeding two or more meals a day seems to reduce the bloat risk." Glickman says another possibility is greater variety, adding canned food along with dry food. Agreeing, Laflamme says, "As long as you are feeding at-risk dogs two nutritionally balanced foods, there is nothing wrong with doing this." Neither Glickman nor Laflamme advocate raw food as a bloat preventive.

Future Directions

Glickman's research has raised some important questions. Is it possible to determine conclusively the role food plays? And what about anatomy? Glickman says that the angle at which the stomach and esophagus connect seems to contribute to a predisposition to bloat. To get a clear answer, Glickman proposes a study comparing the characteristics of dogs within each breed that bloat with those who do not. Connie Vanacore has decades of experience breeding Irish Setters, which are often stricken with bloat. She has been part of numerous health initiatives at the Irish Setter Club of America, including Glickman's study. "The study had many surprises for us all," she says. "When his research came out, we put his findings into articles in our newsletters and sent out information to our members so they could pass it on to puppy buyers and tell people what to look for." Other national clubs for high-risk breeds did the same.

Although many of Glickman's findings were easy to implement, some were a challenge. One discovery was that breeds with deeper, narrower chests appear more likely to bloat. "To follow the results," Vanacore says, "you'd only breed dogs with wider chests. But we aren't going to do that. Our breed standard calls for narrow chests, which also gives the dogs greater lung power."

According to a key rule of breeding, eliminating a favored body type just to avoid bloat would alter the desired physique and be detrimental to overall health. If Vanacore and other breeders knew the responsible genes, they could breed dogs with the preferred body type, even when those dogs have the defective gene, as long as the mating includes a dog known to be clear.

"For now," Vanacore explains, "we have management, not breeding practices."

Glickman encourages wider studies of bloat and torsion. "It accounts for as many, or more, deaths in certain breeds than any other cause. If I were going to put my money into a genetic study, I'd do this instead of cancer or hip dysplasia, which are much more complex... If we put the money into it, we could go a long way."

Uncovering the genetics would help breeders deal with another complication: Bloat and torsion usually occurs long after the dog has already been bred. When an older dog bloats, is it genetic, and should the breeder stop relying on that line, or is it simply due to aging?

"If I see Akitas bloat at 9 months old," Wallis says, "that's a major red flag. I won't breed from that line. But if an older dog bloats, you might go back and see some history of it, or you might not see any other dogs that had it. Age is tricky."

DNA tests may one day answer these questions. In the meantime, Williams urges her fellow breeders to make full use of pedigrees to help reduce the incidence of bloat. "If you really love your dogs, there's nothing worth putting them through such excruciating pain. To even consider breeding dogs you know are affected is inexcusably cruel. My biggest hope is that bloat and torsion can become a rare thing. But for that to happen, everyone has to be involved."

Freelance writer Matthew Schenker lives in Northhampton, Massachusetts, with his wife and a standard Poodle.

Sidebar:

High-risk Breeds

Although any dog may bloat, the breeds listed below, in alphabetical order, are considered at highest risk:

- Akita
- Bloodhound
- Collie
- German Shepherd Dog
- Great Dane
- Irish Setter
- Irish Wolfhound
- Newfoundland
- Rottweiler
- Saint Bernard
- Standard Poodle
- Weimaraner