

Swissy Spleen Syndrome

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All dogs, from Chihuahuas to Mastiffs are the same species. All dogs, because they are canines, share some common attributes and problems with all other canines. Each individual breed of dogs has been developed over time for certain special attributes, appearances, and abilities, and indeed some problems have grown to be considered breed specific as well. Mixed breed or random bred dogs are often touted as being healthier or more vigorous than their purebred cousins, but in reality they suffer from some or all of the illnesses and diseases that affect the entire species, and at the same rate at which their purebred cousins succumb. The difference is that there are no special studies or information gathering groups that document and follow the issues of mongrels. On the other hand, national breed clubs and breeders regularly discuss problems they encounter with their fellow fanciers and breed enthusiasts.

Studies are funded and papers are written about rare and strange, as well as unusually common, problems encountered within certain breeds or breed types of dogs. We all know that Dalmatians are prone to deafness. We know that Irish Setters are more likely to bloat than many other breeds and we know that Bedlington Terriers have a storage disease that seems to affect them out of all proportion to all other dogs. We are grateful that the Greater Swiss Mountain Dog Club of America has invited us to write to the quarterly SENNtinel about our unique experiences with this wonderful breed. We hope that our experiences may help others and we hope to continue to gather information about specific problems that seem to occur in GSMDs, particularly at this time, with their spleens.

Greater Swiss Mountain Dogs and fanciers are still infants in the purebred dog world of today. The breed has been around a long time, but the organized study of documented cases of problems has only just begun. You are a small group, relatively speaking. Many people, many veterinarians and many otherwise knowledgeable dog people have barely, if even, heard of GSMDs. A handful of veterinarians who have clientele made up of breeders and longtime owners of the breed have information based on experience that others throughout the country do not. For the most part, this breed is relatively healthy for the size that they are. GSMDs are plagued with far fewer problems than more populous breeds, for example Rottweilers or German Shepherd Dogs, in the similar size range. The national population of your breed is not sufficient for the average veterinarian to see enough of them to start to form opinions about what a “typical” Swissy problem might be. Fortunately, because of our location and our clients with fair numbers of Swissies, and because of our ability to communicate now as never before, we are learning some things about Swissies that we hope to share with others throughout the country.

If you mention spleen to most people, they will have a blank look. If you say spleen to long time GSMD owners they grow pale and sweaty. The spleen is the largest single mass of lymphatic tissue in the body. It is an organ that assists with immune function similar to the way the lymph nodes work. “The

spleen has multiple functions, including hematopoiesis, filtration and phagocytosis (removing worn out, ruptured or defective blood cells).... acting as a blood reservoir, metabolizing iron, and immunologic functions.”¹ Enlargement of the spleen (splenomegaly) may be coincidental or caused by disease, medications, sedation or trauma. In most dogs, mild splenomegaly is not considered remarkable and may even be expected when the animal is fighting an infection or disease. Many cancers that affect dogs become evident on the spleen first. All dogs can have a tumor or tumors on the spleen that prove deadly, whether malignant or benign, because if the spleen or the tumor bleeds, the dog may die.

Torsion of the spleen is generally considered a coincidental finding after a gastric dilatation volvulus event (GDV - bloat/torsion of the stomach). The prevailing consensus is that the stomach bloats and twists and takes the spleen along for the ride. GDV is a medical emergency and surgery is needed to decompress the stomach, reposition it and tack the stomach so that it will not likely torse again. Many times the spleen is checked for viability or gross damage and left in place if necrosis is not present at the time of the surgery to repair GDV. Some Swissies who have GDV also have torted spleens. This is consistent with all other dogs that also suffer GDV. However, GSMDs have regularly demonstrated that, on this subject, they do not exactly fit the mold. In the veterinary literature, this topic is briefly discussed if at all. For example, “Splenic torsion can occur independently of the GDV syndrome. Most affected dogs are large, deep-chested breeds, primarily Great Danes and German Shepherd Dogs. Clinical signs can be either acute or chronic.”²

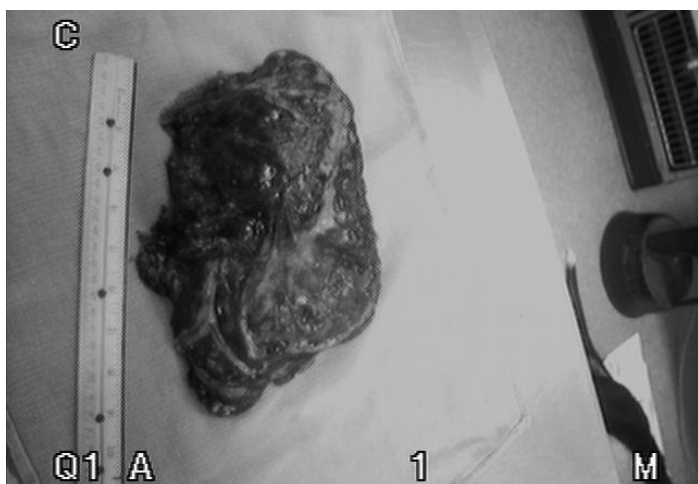
In a normal Swissy, the spleen looks smooth and uncreased, and is about the size and shape of a good NY Strip steak—6 to 8 inches long by 2 inches wide, and not very thick—less than 1 inch. However, at a rate too numerous to ignore, it seems apparent that many GSMDs may suffer pronounced splenomegaly for no obvious reason other than that the spleen may have been constantly twisting, folding and unfolding. As you will see in the included photos, most of the spleens removed from GSMDs are 18 to 24 inches long, 8-10 inches wide and very thick, we have seen from 2-6 inches. This size spleen is not at all an uncommon abnormal finding in this breed. Primary splenic torsion without accompanying GDV is relatively rare in dogs, but it is not evidently rare in GSMD. As we will discuss below, the typical presentation of a Greater Swiss Mountain Dog with a torted or damaged spleen is not the same as it is with most other dogs, i.e. in our experience they do not usually suffer GDV first or at all.

¹ Small Animal Internal Medicine; 3rd Ed. Mosby; Edited by Richard W. Nelson DVM, C. Guillermo Couto DVM et al. 2003, page 1200.

² *Ibid.*, page 1204.

It is our supposition that GSMDs may have a breed tendency or a conformation anomaly that allows or causes the spleen to chronically fold or partially torse and then return again and again to normal position over a prolonged period of time. They may also be predisposed to primary splenic torsion without any gastric involvement whatsoever. Whether the spleen is conformationally hanging in an unusual position or has breed specific weakness or laxity in placement, attachment (gastrosplenic or splenocolic ligaments) or blood supply is unknown.

“Splenic torsion most often occurs in association with gastric dilatation-volvulus. Isolated splenic torsion is rare but has been reported in dogs. Typically, the thin-walled splenic vein is occluded, although the splenic artery remains partly patent, resulting in congestive splenomegaly.....In some dogs the clinical signs are acute, although in others the torsion presumably is intermittent and abnormalities are noted weeks before diagnosis. The cause of isolated splenic torsion is unclear. It may be related to congenital abnormalities or traumatic disruption of the gastrosplenic or splenocolic ligaments.”³



Splenomegaly alone may be caused by chronic blood flow obstruction brought on by chronic folding/torsing or it may be coincidental or altogether unimportant. GSMDs may present with only mild symptoms of malaise or they may present in acute distress. Surprisingly, many of these dogs in acute distress with signs of shock and marked anemia are still ambulatory and many are still playful and alert as well. The spleens are grossly enlarged but oddly, it is sometimes not possible to appreciate them by palpation.

In the cases described below, and with the survey study we intend to continue, we are trying to determine what causes or conditions appear to be consistent within this breed. Obviously, all information is anecdotal at this stage and we do not have enough data to predict a cause or propose any preventative procedures. The information and hypothesis offered here is simply to share knowledge on this relatively rare breed. We hope that others will be better prepared to quickly reach a diagnosis and possibly spare GSMDs and their owners any prolonged pain from a problem that is possibly very rare in the species but evidently fairly common in this breed.

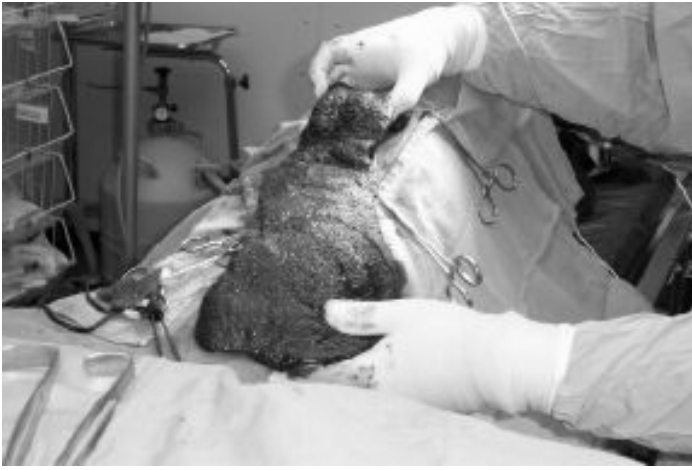
³Small Animal Surgery; 2d Ed. Mosby; by Theresa Welch Fossum, DVM, MS, PhD et al. 2002, page 542.

As you will see below, dogs may present with symptoms of a problem that is not immediately obvious. Some symptoms are mild and have been chronic in nature. These symptoms mimic other disease processes and our goal here is to encourage owners and their veterinarians to determine that the spleen is NOT the problem before moving forward to rule out other more common and less critical possible diagnoses.

Over the course of the last seven years, our clientele of owners and patient number of GSMDs has grown. Our records show 80-100 GSMDs active during that time period. Eliminating puppies that did not stay in the area and dogs that were treated at our clinic only one time on a referral basis for unrelated issues leaves 72 GSMDs. Fourteen GSMDs were considered eligible to be included in this group of spleen cases. That is, 19.4% of our GSMD population during a seven-year period developed what we are considering a specific splenic syndrome. In this same time period, NO other breed or random bred dog has presented with a similar splenic malady at our clinic. None, not one other dog outside of this breed suffered this condition — this is significant. Splenectomies performed on other breeds have always been for tumor removal or for traumatic injury. In our practice we have only seen idiopathic independent splenic torsion occur in the GSMD.

In our experience GSMDs appear to present to us one of two ways: Symptomatic - chronic or acute and Asymptomatic - found coincidentally during another surgical procedure. The chronic symptoms that we have come to recognize may be extremely vague. Usually an owner has a complaint of simple “ADR” (veterinarian-speak for “Ain’t doin’ right”). These dogs are typically vibrant and goofy upon exam, but they might have slightly pale mucous membranes. They may have a history of intermittent nausea and vomiting or what the Swissy people so eloquently describe as “Lick fits”, i.e. drooling and/or compulsively licking air or front feet or licking or eating grass, dirt, carpeting, clothing, hair, walls, etc. The aforementioned symptoms are the most common and also the most baffling as nausea and vomiting in the dog species is a common ailment and can signal many different problems. Splenic torsion is historically not even on a long list of typical rule-outs for this at most vet clinics.

Of the symptomatic cases, acute symptoms are more dramatic. Usually a collapse or suspected GDV brings them to our door on an emergency basis. Again, surprisingly these dogs generally walk or bound into our lobby. The owners are nearly always distraught and very worried but we see a dog that does not initially appear to be in a crisis. Further history and physical exam generally shows, acute onset of a collapse, urgent incessant nausea/vomiting, very pale mucous membranes, occasionally a painful or rigid (but not usually distended) abdomen and a PCV (packed cell volume) of < 30 (normal being 37-55). Despite their behavior, these dogs are in danger, and they are in crisis. If we do nothing else in this article, we hope to let owners and their veterinarians know that dogs of this stoic breed may look happy and energetic and still be knocking on death’s door. It is important to acknowledge the owners’ instincts in this regard. We recommend that veterinarians aggressively evaluate these dogs — take a complete history, order immediate blood evaluations, radiographs and/or ultrasound; initiate treatment for hypovolemia and/or signs of shock and



then most likely be prepared to do exploratory surgery.

SYMPTOMATIC:

In our 14 splenic torsion cases we have recorded 9 dogs with symptomatic presentation. These symptoms vary from the “just not acting normally” to the “he collapsed in the living room” presentations. Of the nine symptomatic cases, seven were male and two were female. Of the males presented the ages were 4, 4, 5, 6, 6, 8, and 11. Of the females, the ages were 4, and 9.5. Two of the males and one female had a history of intermittent or occasional vomiting/nausea. Three of the males had an acute collapse, one after a regular scheduled blood donation to a blood bank and two others at their homes with no obvious precipitating events. Three males showed marked lethargy and ataxia (stilted walk/gait), but were otherwise alert and responsive.

Two males presented as apparent GDV, one was decompressed via stomach tube, the other via gastrotomy surgery prior to surgery to repair and tack the stomach. Both of these dogs appeared to be traditional presentations of torsed spleen, i.e. we originally suspected that they bloated and torsed and the spleen was involved as is generally the case. Upon surgical examination of the stomachs and spleens, we found that it was more likely that the splenic torsions in these two dogs actually preceded the GDVs and may, in fact, have caused them. In both of these dogs the spleen, blood vessels and omentum were significantly twisted and tangled, the stomach much less so and there was no necrosis, nor non-viable gastric tissue or vessels, but the spleens were extremely necrotic and friable. These two cases are a sire and his male offspring. Additionally, one of the female symptomatic cases was another offspring of this same sire and full sibling to the male. This may be coincidental as the dogs are similarly owned and therefore all are our patients or it may be something to consider for a pedigree study for GSMD breeders.

ASYMPTOMATIC:

Of the five asymptomatic cases, two were male and three were female. Both of the males were four years old. Of the females, the ages were 2.5, 3 and 4. The males were scheduled for prophylactic gastropexies and routine neuters. Both were healthy, active and without GI symptoms or blood values outside of normal limits. The grossly enlarged spleens became obvious

during the initial surgical approach to perform gastropexy. With the female GSMD, the scheduled procedures were routine spay and prophylactic gastropexy. None of the three females had any abnormal blood work, nor unusual physical characteristics or history of GI problems before scheduled surgery. In two of the females, the spleen was so large that it was evident and obviously previously creased and twisted and was crowding even the caudal abdomen making the ovariohysterectomy (spay) more difficult. In one of the females an incidental finding of a patent urachus (congenital bladder anomaly) was also discovered and repaired during the same surgery. The five asymptomatic presentations included here are to show that GSMDs may present for elective procedures and an abnormal spleen may become apparent during physical exam or pre-operative blood work or during the actual originally planned surgical procedure. These are included here to educate others about the need to request permission to examine the spleen in this breed when possible and to encourage removal if it appears even moderately abnormal. We highly recommend that all animals have pre-operative blood work before any anesthetic event, but we realize that some veterinarians do not require this precaution. We would suggest that GSMD owners demand blood work prior to any surgery and discuss the results and options with their vet if there are any questions prior to any procedure. We recommend that veterinarians require blood testing on this breed prior to any procedure and recommend that radiographic or sonographic evaluations of Swissy spleens be part of any diagnostic work-up for even the vaguest of GI or anemia symptoms.

While we are not prepared to recommend or suggest that any normal spleen be removed as a precaution, we are suggesting that the possibility of a splenic abnormality be discussed with every Swissy owner before any abdominal surgery so that appropriate guidance and pre-approved permission to remove is granted. This is to prevent unnerving emergency phone calls requesting permission during a surgical procedure. Discussion of risks, costs and possible aftercare should be breached prior to any abdominal procedure on this breed.

Here at our clinic, every spleen of every Swissy is evaluated during appropriate surgeries. Many times they are completely normal in size, shape, texture and perfusion. Occasionally they may be mildly enlarged as is common in sedated dogs or dogs with some other disease process. In compiling data for this article we also counted among our Swissy patients records 12



documented cases of GSMD who had mildly enlarged, but normally functioning spleens visible during other surgeries or diagnostic radiographs or ultrasounds, these spleens were not removed. We have encountered ordinary splenic tumors in this breed and removed those spleens as we do in all other dogs. Those mild splenomegaly or obvious spleen tumor GSMD cases were not included in this article.

One of the recommendations that we will make is that, just like leftovers in the refrigerator, your policy on Swissy spleens should be “when in doubt – take it out”. Any gross splenomegaly, or signs of blood flow (perfusion) problems or evidence of creasing, twisting, or folding of a Swissy spleen is a sure sign that there is a problem brewing. We have been made aware of tragedy following an obviously torsed or damaged spleen left in place after GDV surgery. We have heard of surgeons attempting to reposition a torsed spleen and leaving the spleen in place and the stomach without a tack. We feel this is a recipe for disaster. Additionally, if it is at all possible to safely perform a gastropexy after a splenectomy has been performed, please do so! This suggestion is amplified by other veterinary recommendations, for example, “Splenic displacement and torsion may stretch the gastric ligaments, allowing increased mobility of the stomach. After splenectomy, an anatomic void may be created in the cranioventral part of the abdomen, contributing to the mobility of the stomach. Veterinarians treating dogs with isolated splenic torsion may wish to consider prophylactic gastropexy at splenectomy, to reduce the chance of future gastric dilatation-volvulus. Prophylactic gastropexy should be done only if the dog’s hemodynamic status is stable enough to allow for performance of the additional surgery.”⁴

We have had more male GSMDs present in acute splenic distress and more female GSMDs where the spleen problem is encountered during another scheduled procedure. We believe this is due primarily to the fact that, for most male dogs, we have little reason to go into their abdomens. As we increasingly do more routine prophylactic gastropexies on BOTH male and female Swissies we suspect we will see more coincidental spleen problems with males as well.

Elsewhere in this issue of the SENNtinel, you will find a survey form to submit if you have experienced spleen problems with your dog(s). All identifying information will be kept confidential. Pedigree information will be assigned numerical identifiers not only to show relationship but also to eliminate confidentiality problems. We hope to show similar findings of age, sex, relationship, body type, body score, and symptoms. All will be tabulated to share with this publication at a later date to help determine if there are predisposing characteristics or obvious comparable symptoms that may help future Swissies and owners. If surgical notes are available please include those with your survey, as we hope to compile data on what has and hasn’t worked for other veterinarians when removing spleens and/or concurrent surgery for GDV or prophylactic gastropexy.

⁴J Am Vet Med Assoc 1995 Aug 1; 207(3):314-5 Millis DL, Nemzek J, Riggs C, Walshaw R. Department of Small Animal Clinic Sciences, College of Veterinary Medicine, Michigan State University, East Lansing 48824-1314, USA.

We are at the beginning of discovering many of the medical realities in this breed. It is possible that splenic torsion in this breed is something new, possibly with an environmental cause that we do not yet suspect, but we think it more likely that it is a breed-specific problem that has been there all along. The difference now is that we have science and advanced technology on our side in order to more fully understand what we are dealing with. Just a few years ago, sonographic and even radiographic evaluations were less likely to be initiated. Basically, if a large breed dog arrived at the clinic or died at home with a tense abdomen and pale gums, it looked like, smelled like, walked like bloat. So we called it bloat and chalked it up to the adage that “large, deep-chested breeds of dog tend to bloat”. What we then considered GDV/bloat deaths might have been splenic torsion deaths. Until we regularly do necropsies on all GSMDs to determine cause of death, most people will likely still err on this side of the explanation. With ultrasound imagery and radiographic evaluations much more common and readily available now we are finding these spleen perfusion issues, chronically twisting/folding spleens and signs of long-term problems BEFORE these dogs die and usually even before they show signs of illness. We take aggressive action to help them both via quick diagnosis and, if needed, surgery.

The purpose of this article is to help others learn from our experience, and offer them the opportunity to return the favor by helping us know more about their Swissy experiences. Thank you for this opportunity to share our thoughts and suggestions. We hope all of you will continue to share information with each other and your veterinarians for the betterment of your breed and your veterinary care. I hope to hear from many of you soon via the spleen survey located elsewhere in this issue and as always, I am available to talk to owners and veterinarians regarding any Swissy medical questions. David E. Jackson VMD. DEJVMD@aol.com. VCA-University Veterinary Clinic, 10681 Braddock Road, Fairfax, VA 22032. 703-385-1054

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Compilation and organization of data and extreme typing by co-author Sharyl Mayhew, BA, LVT.