Knight A. The hazards of giant stomachs. In H. Woodvine (Ed.). *Veterinary Reflections*. Helen Woodvine, UK. 2009. www.trueshortstories.co.uk.

It was supposed to be a nice, easy morning at my new hospital. "Just a couple of spays and castrations," the other vet smiled reassuringly. "We thought we'd ease you in gently," she offered, as I tried to disguise my relief. Having endured one of my most hellish weekends at this hospital previously, I was well aware of its reputation for unexpected emergencies. It was, therefore, with no small degree of trepidation that I had accepted an offer to relieve the second vet for the week. Locum vets must, however, go where the work is.

I unsuccessfully attempted locate a hospital coat as my colleague steered me around the hospital in a flurry of distracted conversation. Given their propensity for accruing animal hair, pus, blood and other noxious substances, I had learnt to avoid using my personal coats wherever possible. The place still appeared to resemble the maze of corridors and stairs I dimly recalled, and by the time the first patients and their guardians started to fill the waiting room, the available drugs and equipment, the names of the staff and their roles, and the hospital protocols, if any, remained shrouded in mystery. Thankfully, I would have plenty of time to settle in, or so I thought.

Things were soon looking up. I was operating rather than consulting, and while my colleague saw the first patients I managed to locate not only a coat to protect my clothes, but even the hospital stash of instant coffee – cunningly hidden in the depths of a cupboard! The nurses were thrilled when I offered them a hot drink. "A vet who makes coffee!" often seems to be a rare species, reflecting, perhaps, an inexcusable degree of arrogance, or thoughtlessness, among too many veterinarians.

Steaming liquid sustenance was soon distributed, which was followed in short order by the arrival of one scruffy, wire-haired and very enthusiastic puppy, and a moderately anxious black and white feline. Both were examined and duly admitted for their routine neutering operations. As I relaxed and started to calculate their drug doses, however, a phone rang urgently somewhere in the background. My heart sank as a muffled conversation complete with expletives in the unmistakable accent of my erstwhile colleague drifted down the corridor, followed soon after by the ominous tread of her footsteps.

It transpired that one of our satellite branches had just seen a very, very large dog, with depression and a slightly bloated abdomen. In short, they suspected gastric dilation-volvulus, or 'twisted stomach,' which large breeds are prone to. They had sent the dog to us, claiming – probably correctly, as it turned out – that their facilities were not large enough to house it!

In such dogs the considerable weight of a heavy meal, especially if followed by exercise, can actually cause the stomach to twist. This blocks the stomach outflow, which can result in a steady expansion as the contents ferment, producing gas. The pressure of the expanding stomach soon exceeds that in the neighbouring veins, thereby blocking the return of blood from the lower half of the body to the heart – and thereafter, the rest of the circulation. The result is plummeting blood pressure, shock, collapse and death, usually in rapid succession.

Emergency surgery is required, during which the stomach is decompressed, un-twisted, and anchored to the abdominal wall, to prevent recurrence. The technique was beautifully described in the illustrated small animal abdominal surgical manual I had foolishly left at home, thinking that I would only be there for a week, and that my technical library was far too heavy to lug around. A quick check confirmed my worst fears: this so-called 'hospital' lacked a soft-tissue surgical text. Unfortunately, I had not yet seen such a case in five years of practice, and it remained the last major soft-tissue surgery I was unsure how to perform. I knew I had been very lucky to date, and that my luck was bound to run out someday…

Half an hour later the dog duly arrived. At 83.5 kg, she was the largest animal I had ever treated, other than one very fat Rottweiler requiring a blood test, with jugular veins buried beneath layers of fat. Suzie (name changed), on the other hand, was an Irish Wolfhound – the world's largest breed – and fairly lean. This was, however, somewhat disguised by what appeared to be an ominous swelling of her abdomen. My valiant

attempts to feel the contents of this enormous, firm abdomen were rapidly revealed to be futile, and so we proceeded quickly to the x-ray room, after taking blood samples for in-house analysis.

Although her legs protruded far beyond its edges, we somehow managed to balance Suzie on the x-ray table. Incredibly, she tolerated our manipulations with quiet grace. Thankfully, it appeared sedation would not be required. The machine itself was less cooperative, however. Our largest x-ray plate would reveal only around a third of Suzie's abdomen. However, by piecing together different views, I confirmed that her intestines had been pushed toward her tail by a massive, gas-filled organ in the front of her abdomen – doubtless her stomach.

Although almost the largest dog I had ever seen, the magnanimity of her spirit appeared to match Suzie's size. She lay calmly and quietly, eyes always upon us, as we manipulated her into awkward positions. I felt safe putting my face only inches from her jaws, as I applied my stethoscope repeatedly to her chest. Her heart rate and breathing were steadily climbing – sure signs of progressing shock.

Fortunately, Suzie's owners had had the foresight to invest in pet insurance, and so were able to afford the £2,000+ bill the x-rays, blood tests and surgery would eventually necessitate. They had already provided consent for surgery if necessary, and so without further delay we walked Suzie into theatre. We rapidly connected both arms to fluids set at maximal flow rates, to try to counter her shock; induced anaesthesia, and prepared her for surgery.

In Suzie's case an appropriately-sized incision ended up nearly 30 cm long! Experienced from countless spay operations, I had no trouble entering her abdomen, whereupon I soon discovered the largest stomach I had ever seen. At around 30 x 20 x 15 cm, it appeared to be distended with gas – conclusively confirming the diagnosis of life-threatening stomach dilation. Oddly, the stomach did not appear to be twisted, even when I inserted my arm up to the elbow, feeling all the way to the stomach outlet.

I was fast approaching the limits of my surgical experience, when my colleague arrived to assist. Fortunately, with 10 years of experience, she had dealt with several such cases. She first passed a stomach tube via the mouth, to decompress the stomach. Although I could feel the tube with my hand, confirming its location, the stomach stubbornly refused to decompress. We eventually succeeded by puncturing it with large sterile needles, which resulted in the whistling exodus of foul-smelling gas. My colleague was thereby able to confirm that the stomach contents had begun to ferment. Rather than creating a free gas pocket, this had resulted in a 'frothy bloat,' which is much harder to expel. However, by lavaging the stomach with warm water passed via the stomach tube, we were able to empty it of Suzie's last meal, as well as a considerable quantity of fluid and gas. Finally, we flushed it with activated charcoal solution, to help remove any remaining chemically-active compounds.

Whilst squeezing out the stomach contents, I detected something firm at the stomach outlet. About three inches long, it refused to break into smaller pieces for expulsion. We manipulated it to the top of the stomach and made a small incision, revealing what appeared to be a chewed piece of pale-coloured rubber. It appeared that this offending item had blocked the stomach outflow, causing Suzie's bloat.

The foreign body was soon removed and the stomach incision successfully closed. By now Suzie had been under anaesthesia for over two hours and we were increasingly concerned about her condition. And so, without further ado, I began the lengthy process of closing her multi-layered abdominal incisions.

All had proceeded beautifully so far, when the nurse suddenly informed me that Suzie was no longer breathing. "Turn off the anaesthetic gas and check for a heartbeat!" I cried. He was unable to hear the heart beating. Tearing off my bloodied gloves, I grabbed the stethoscope from his hands, and confirmed the deathly silence within Suzie's chest.

We grabbed the 'crash kit' and injected massive doses of adrenaline into Suzie's intravenous drip lines, in a desperate attempt to restart her heart. I manually compressed her chest as quickly as I could, while a nurse manipulated the reservoir bag attached to the anaesthetic machine, providing artificial breaths of pure oxygen every 5-10 seconds. We added a respiratory stimulant to her intravenous lines, but nothing seemed to work,

other than a very brief period when her heart gave two slow beats, then stopped again. After 10-15 exhausting minutes we were forced to face the reality that Suzie was not coming back to us.

Mr Jones (name changed) took the news extremely well. It turned out that the piece of 'rubber' was exactly the size and colour of a 'chew' he had fed Suzie the day before, which had clearly been insufficiently chewed. Mrs Jones, on the other hand, was somewhat hysterical. Suzie had clearly been very much loved, and this elderly couple had no other animals or children living with them.

Breaking news like this is one of the hardest parts of a veterinarian's job. I know that what will haunt me most, however, is the memory of Suzie's eyes, as she gazed at me calmly and trustingly from the x-ray table, her heart rate steadily climbing, matching her increasing discomfort as she went into shock. Suzie never once complained. She was only three, and did not deserve to die.

As the years roll by, I see an ever-increasing stream of old german shepherds with debilitating arthritis, west highland white terriers with painfully inflamed skin allergies, pugs with breathing difficulties, heat stroke and increased anaesthetic risks, due to their cruelly-shortened faces, cavalier king charles spaniels with progressing heart disease, and other pure-breeds with a wide range of hereditary defects. Now, I am able to add first-hand experience of the life-threatening hazards of giant stomachs, in giant breeds.

Literally hundreds of such anatomical vulnerabilities and deformities exist, associated with virtually every pure breed. The financial and emotional suffering of their human guardians pales in comparison to that experienced by these poor animals, trapped for life in defective bodies, created because someone once thought an unusual dog was aesthetically pleasing, or suited some other human purpose. The cycle is perpetuated whenever an excited new owner pays some thoughtless person to continue breeding such animals. And that is why veterinarians such as I wish people would only realise that the healthiest dogs have always been mixed-breed mutts.