

# Zoko - "Too hot to handle"

## Case Study—January 2012

Zoko is an exuberant, fit, healthy two year old male Staffordshire Bull Terrier. He is full of enthusiasm and does everything at 'full speed ahead'. He regularly takes his owner for a walk (yes, not the other way round) and he can't get enough of life.

A few weeks ago though, just before Christmas, his daily walk ended in catastrophe. It was a hot humid summer day and the temperature was well over 25<sup>o</sup> C by 9am. For the first 30 minutes of his walk, Zoko led the way even running on the spot at times. He was puffing and panting as normal, wanting to go faster....and it was only when he collapsed and could not get up that his parents knew something was horribly wrong. His tongue was going blue and he was struggling to breathe.

His parents carried him home and then brought him straight into the Veterinary Surgery. A phone call made en-route allowed us to prepare for his arrival.

At admission, Zoko's rectal temperature was dangerously high at 42.8<sup>o</sup> C, and well above normal for a dog ( 37.2 to 39.2<sup>o</sup>C). His internal organs are not designed to be at this temperature, so emergency treatment began.

Zoko was cooled down with running tap water, and he was placed on an oxygen mask to help him breathe. An intravenous drip was needed to cool him down and keep his blood pressure up whilst he was in heat stroke. Zoko was given a small sedative as he was so stressed out by fighting to breathe. Medication to settle the swelling and obstruction in his throat was also given. After 30 minutes Zoko had stopped panting and his temperature was 39<sup>o</sup>C. He was standing up and wagging his tail.....but his ordeal was far from over.

Heat stroke is a very serious condition in which internal organs are effectively 'cooked' by the high body temperature, and it can take a couple of days before the full extent of damage becomes obvious. Zoko was hospitalised for 72 hours for monitoring and treatment to prevent his internal organs from shutting down, and a crisis developing.

He was kept on a drip to keep his blood pressure up and stop him going into shock. An indwelling urinary catheter was placed to measure his urine output. Lack of urine production is an early indicator of reduced kidney function. His heart rate, oxygen levels, blood pressure and ECG rhythm

were continuously monitored day and night to make sure his heart was okay. Blood tests were done twice daily to check the state of his liver and kidneys, to monitor for muscle meltdown, and to monitor electrolytes, blood cells and blood clotting times. Our in-house Laboratory provided us with these important results within 20 minutes of blood collection.



Zoko was given medication to prevent stomach ulcers, and to prevent vomiting and bowel stasis. Fresh frozen plasma (from the canine blood bank) was given to replace his plasma proteins destroyed by the heat, thus preventing fluid build up in his lungs and brain. Antibiotics were administered into his drip to prevent the normal bowel bacteria creating sepsis. He was trickle fed water and oral electrolytes until his bowels could handle food again without vomiting or diarrhoea and he received lots of TLC.

It was 'touch and go' for the first 48hours as Zoko's liver and kidneys began to bear the brunt of the heat stroke, but Zoko never gave up. His heart remained strong, his blood pressure never faltered and his tail never stopped wagging!

After three days in the Intensive Care Unit, Zoko had defied the odds and his internal organ function came back to normal. He was discharged from hospital for some R'n'R at home and has continued to make a full recovery.

Zoko's heat stroke was triggered partly by heat and exercise, but also by a conformation problem in his throat that restricted his ability to breathe and pant for heat loss. Any short-snouted breed (brachycephalic) including, but not limited to, Pugs, Boxers, Cavaliers, Tibetan Spaniels and Staffies are prone to heat stress. They have a long soft palate, enlarged tonsils and a smaller windpipe (trachea) than other breeds which impairs airflow into their throat. Please be extremely careful in summer with these breeds.

Zoko's temperature was the highest on admission that we have ever seen, and if his parents had delayed bringing him to our Veterinary Surgery for treatment it could have been a very different ending.

