



Congress speakers, thanks to PetSavers

Chloe Cross and Zoe Nalborczyk, third year students at the University of Surrey, found themselves with an opportunity to not only participate in important companion animal research, but also present at BSAVA Congress. Zoe shares their journey

If someone had told us that by the end of our second year at vet school we would have presented at BSAVA Congress, we would have laughed ourselves silly, but that's the position we found ourselves in last April.

During our first year of study at the University of Surrey, Dr Clare Rusbridge, one of our lecturers and Head of Neurology at Fitzpatrick Referrals, received two PetSavers Student Research grants to continue

studying Chiari-like malformation and syringomyelia in Cavalier King Charles Spaniels. A condition of these grants is having a veterinary student as a researcher on the project – at most vet schools, fourth and fifth year students are chosen. However, as Surrey only had first-year students at that stage, the position was opened to us all. Chloe and I were lucky enough to be chosen as the successful candidates and began our research in July 2015. Little did we know that over the next 12 months we would complete our research, write abstracts, submit them to BSAVA and be chosen to present at BSAVA Congress 2016 in Birmingham.

How we started

Neither of us had any in-depth knowledge of neurology beyond our first-year anatomy and physiology classes, nor had we ever interpreted an MRI before, which was the bulk of our data collection. We were very lucky to have a supportive supervisor in Clare who met with us on countless occasions, explained a particular concept numerous times and always made herself available to answer our questions. She also offered us the opportunity to see practice at Fitzpatrick Referrals to give us some experience of neurological problems and diagnosis, and allow us to understand and appreciate the positive impact clinical research can have on the animals she sees every day.

Our area of research

Chiari-like malformation is a complex malformation where there is a shortening of the skull, causing the descent of the brainstem and lower cerebellum through the foramen magnum into the cervical vertebral canal. This causes overcrowding of the craniocervical junction, resulting in cerebrospinal fluid pathway obstruction and frequently leading to the development of syringomyelia, a painful condition characterised by fluid-filled cavities in the spinal cord.

A classic sign of severe syringomyelia is 'phantom scratching' – a tendency to rhythmically scratch towards one shoulder without making skin contact – which can occur spontaneously or be induced by stimulating the neck skin. The mechanism behind phantom scratching remains unclear, with popular theories including neuropathic pain/itch failing to explain the lack of skin contact. Chiari-like malformation is considered ubiquitous in Cavalier King Charles Spaniels, with many of these dogs also suffering from syringomyelia, making them ideal study subjects.

Chloe's project, "Forebrain changes in Chiari-like malformation", focused on the skull dimensions in Cavalier King Charles Spaniels [CKCS] with Chiari-like malformation. Traditionally thought of as a hindbrain disorder, recent studies have suggested that conformational changes are not confined to the hindbrain and that the entire skull base is foreshortened.

For my project, "Scratching that itch – elucidating the spinal cord injury which causes reflex 'phantom' scratching in canine syringomyelia", I concentrated on

identifying the neuroanatomical site associated with phantom scratching in CKCS with syringomyelia.

Data collection

Our data collection involved taking measurements from MRIs using software called EFILM. Chloe analysed T2W mid-sagittal brain MRIs and took multiple measurements by drawing lines on to the MRI as well as measuring certain angles, which proved great anatomy revision. To begin with she found it quite difficult to measure the angles, but with a lot of practice this became much easier. I analysed T2W transverse slices of the cervical spinal cord of CKCS with clinical syringomyelia, half of whom had phantom scratching and half of whom didn't. For each transverse slice 8 measurements were taken which, considering each MRI contained 15–25 transverse slices of the cervical spinal cord and there were 37 MRIs in total, was a lot of measurements, over 7000 to be precise.

Although challenging to begin with, growing familiarity with the software increased both confidence and speed over the two months of data collection. Once we had all our data, all that was left was to complete the statistical analysis and examine our results.

Preparing for BSAVA

The wait to hear back from BSAVA was agonizing but when we heard that both of our PetSavers grant abstracts had been accepted, all three of us were over the moon. Not only were we Surrey Vet School's first students to be presenting at BSAVA Congress, but also we were still only second years, making this a massive achievement for us.

After receiving confirmation of our abstract acceptance, the pressure was on to prepare our presentations whilst juggling our university workload. Writing a twelve-minute presentation sounds relatively simple but it is very difficult to try to fit everything you need to say into that time. Once the presentation content had been tackled, there was just the minor detail of summoning the courage to talk to a roomful of people. Luckily Clare had thought about this and organized for us to present to all the students and some of the staff at the vet school as a practice run. Although terrifying at the time, this really boosted our confidence and the constructive criticism given by the

audience allowed us to refine and improve our presentations.

As April rapidly approached, we got ridiculously excited when our Congress passes arrived in the post and spent hours pouring over the schedule trying to decide what lectures we wanted to attend. Before we knew it we were on a train up to Birmingham, nervous but excited to experience our very first BSAVA Congress.

Going live

We arrived at Congress bright and early on Thursday morning to collect our goodie bags before flitting between the oncology, neurology, endocrinology and wellbeing streams. It was an incredibly interesting but hectic first day, filled with engaging lectures and a tour of the enormous exhibition. We had been worried that as second-year vet students, everything would be pitched at far above our current level of knowledge and skill, but we'd

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selected the lectures carefully and they fuelled us to learn more about certain conditions or techniques.

On Friday we attended the neurology clinical abstract stream to watch Clare and the other neurologists give their presentations to see how it's done. Then Saturday, the day of our presentations, arrived. In the morning, we presented with Clare in the PetSavers stream to talk about what it was like to complete a PetSavers Student Project. It went brilliantly and gave us the opportunity to practice presenting, with a safety net of all of us being on stage together.

Before we knew it, it was 2pm – the start of the PetSavers Clinical Abstract Stream. Both presentations went as well as we could have hoped and as Clare had

reassured us, even the questions weren't too scary. Feeling very proud of ourselves, we were able to celebrate that night at the amazing VetFest with lots of great music and entertainment. We spent Sunday morning attending a few more lectures and soaking up the last of the atmosphere around the exhibition. As we were boarding the train home, we couldn't stop talking about what an amazing time we had had.

Reflection

From participating in a PetSavers Student Project Grant, we gained a massive insight into what it takes to plan and complete research. As third years we have to complete a research project, so this experience has given us a big advantage. It has also allowed us both to step out of our comfort zones and to develop our presentation skills.

The entire experience, from completing our research to writing abstracts and BSAVA Congress, has been truly fantastic. We couldn't have wished for a more supportive supervisor in Dr Rusbridge, who poured so much of her time and energy into answering a never-ending stream of questions and filled us with the confidence that we could achieve our goals. The value of being able to conduct clinical research so early on in our veterinary careers cannot be underestimated and has given us both so much more confidence moving forward into the third year of our studies.

Chloe has also been offered the position of BSAVA Senior Student Rep at Surrey while Clare is acting as the BSAVA Staff Rep, allowing them to organise events for the companion animal clinical club as well as promoting the work of BSAVA and PetSavers.

We are very thankful to PetSavers for our grants, which allowed us to conduct our research, and to everyone at BSAVA for being so welcoming and supportive of two very green vet students. We've had the most amazing time and would strongly encourage any vet student, regardless of their experience, to take the opportunity to get involved with research. 🐾

For more information about opportunities with PetSavers visit www.petsavers.org.uk or email info@petsavers.org.uk.