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Running Again

by Jeanie Robinson-Pownall

The Emergency Service at VHUP, the Veterinary Hospital of University of Pennsylvania, treats many animals with traumatic injuries. One of the most devastating can be an “HBC,” or “hit by car.” Veterinarians, nurses, and technicians rush to save the animal’s life. The challenges are immense. Sometimes, the rehabilitation can be more complex and difficult than the initial treatment. Dr. Jeffrey S. Christiansen, a resident in small animal surgery, worked with rehabilitating a very special “HBC” patient who had been stabilized elsewhere.

Elsie, a one-year-old spayed female mixed-breed, was referred to VHUP by her local veterinarian, who treated her immediately following the accident. She exhibited weakness in all four legs and was unable to walk. After four days of conservative management, consisting of cage rest and the anti-inflammatory medication prednisone, Elsie’s veterinarian referred her to VHUP for

further evaluation and treatment.

Elsie presented at VHUP with her left pupil contracted, but with normal mental and other cranial nerve functions. She had no motor ability in the left front limb and no feeling below her

increased muscle tone. Due to gradual improvement in the other three limbs, the owner elected to continue with conservative therapy including cage rest for two weeks, followed by passive range-of-motion exercises in her left front limb.

The possibility of severe self-mutilation was discussed. (Self-mutilation frequently occurs in animals who have lost feeling to a particular area. Humans describe a feeling of numbness or pins-and-needles from the damaged nerves. When animals experience this feeling, they tend to chew the area, often quite severely.)

At six weeks post-injury, Elsie had regained normal use in three limbs, but showed no change in her left front leg. Over the next six months Elsie’s regime included splints, aggressive physical therapy to overcome muscle atrophy (including swimming every night, a privilege for which her owner traded masonry work on the swimming pool), and



Chris Curtain and Elsie wearing her orthotic.

elbow. The right front limb demonstrated motor ability with normal muscle tone and flexion. Both hind limbs demonstrated motor ability and

treatment of abrasions on the top of the foot from inappropriate weight-bearing. At eight months post injury surgery was performed to fuse the carpal (“wrist”) bones.

At ten months post-injury (eight weeks post-op), the bandage was removed. Elsie was encouraged to walk at a controlled gait to help her place the paw normally. After two weeks it was clear that she was knuckling over and weight-bearing improperly approximately 50% of the time. She had developed more ulceration and abrasions on the top of her foot. These injuries were treated as previously, and a rubber boot (Lewis Dogboots™, based in Enid, OK) was placed to help keep her paw in a weight-bearing position.

This was initially successful, and the dog was able to run and bear weight normally with the boot. After a few months of this, the owner explained that her foot would become soaked after just a few hours of wearing the boot. This caused the tissues to become macerated and easily abraded or ulcerated. She would weight-bear normally 80% of the time, but would still knuckle over occasionally. The boot had to be wrapped to her leg with adhesive tape in order

Update on Project: M.A.R.E.

Researchers at the School of Veterinary Medicine received funding from the Pennsylvania Department of Agriculture for a three-year study to identify the causes of abortion and pregnancy wastage in horses in Pennsylvania (Project M.A.R.E. — Monitoring Abortions and Reproductive Efficiency in Pennsylvania). The study is now in its final season. Dr. Patricia Sertich, assistant professor of reproduction, and Dr. Perry Habecker, assistant professor of pathology, are the chief investigators. The grant is underwriting the cost of necropsy, diagnostic tests, and associated costs — everything is provided free of charge to the mare owner.

Any horse breeders interested in participating in the project should call for a breeding management survey. Any Pennsylvania breeder with a mare that experiences pregnancy loss

can have a complete diagnostic work-up to determine the cause of loss with all expenses paid by the Pennsylvania Department of Agriculture. Veterinarians who provide reproductive care for these breeding farms were also solicited to participate in Project: M.A.R.E. and receive information and materials to properly submit diagnostic specimens for determination of the cause of pregnancy loss in any aborting mares

If you or someone you know would like to become enrolled in Project: M.A.R.E., please contact us. Results of the study will identify the causes of pregnancy wastage of mares in Pennsylvania. Once these causes are identified, we can develop research projects to help control the pregnancy loss. Please contact Patricia Sertich, V.M.D. at 610.444.5800 x 2229 or Perry Habecker V.M.D. at 610.444.5800 x 2385.

New Facilities for New Bolton Center Swine Teaching Herd

Construction of a new facility for the New Bolton Center swine teaching herd began in early September and completion is expected in January, 2001.

The swine teaching herd began in November, 1997 with reactivation of existing swine production facilities and the purchase of 60 sows from RPM Farms of Beaver Springs, PA by Drs. Pitcher and Parsons with the support of a University teaching budget. The herd functioned for two years, during which extensive teaching programs in swine production medicine, reproduction and neonatology were developed and student interest expanded exponentially. In addition, animal flow schemes were worked out which allow the herd to emulate one three times as large, thereby multiplying scarce teaching resources. Deterioration of the facilities forced deactivation one year ago and plans were implemented to construct the new building. Sixteen of the original sows, along with 26 of their progeny selected for high productivity, remain at New Bolton Center as a nucleus to populate the new



facility when it is completed.

The new building is designed to both accommodate teaching needs and incorporate cutting edge swine husbandry technologies. A classroom will be located in the center of the barn from which many different phases of production can be easily observed, and lectures can be given with on-going swine production as the backdrop. Both novel animal-friendly housing systems and environmental-friendly

automated feeding systems are also being imported from Europe. When the building is finished and occupied, it will not only be a teaching facility but will also serve as a building where Pennsylvania farmers can perhaps see their future. The facility aims to test the feasibility of new production systems that offer the opportunity for preeminent animal welfare, minimal environmental impact, and high productivity.

to keep it placed properly on her foot. In addition, the owner had to purchase a new boot every two weeks, as her vigorous lifestyle caused rapid breakdown of the rubber boot.

Dr. Christiansen was aware that Rob Sigafos, the chief farrier at New Bolton Center, was successfully developing and building orthotics for horses. Mr. Sigafos has refined production of these custom-made devices for over two years and they have helped countless horses with a variety of problems, including laminitis, hoof wall separation, and a host of orthopedic and musculoskeletal disorders in adults and foals. When Dr. Christiansen contacted Mr. Sigafos about the idea of an orthotic for a canine patient, Rob responded enthusiastically and an appointment was set up at VHUP for Elsie so a mold could be made. Elsie was



slightly sedated. She needed to hold still while her front leg was placed in a container full of dental alginate impression material, the same substance a dentist uses to take mouth impressions. "It's quick setting and pliable," explained Mr. Sigafos. "It is also non-toxic." Once the material had set, Mr. Sigafos very gently split the mold and now had a negative of Elsie's leg. He set the block of material back in the container, put a rod in negative space and poured plaster of Paris into the hollow. Once this set, he had Elsie's leg in plaster — he could return to New Bolton Center and fashion an orthotic from polyethylene that would fit Elsie. Her new footwear has Velcro® straps for ease in putting on and off, a

non-skid sole, and vents to prevent moisture from accumulating within the brace.

When the new brace was placed, the dog was instantly able to run and play on it. It was approximately 50% larger than the rubber boot, but was light in weight. Repair or replacement could occur rapidly and easily with the test mold kept in stock. The owner was extremely pleased with the new boot and reported the dog was able to run as much as she wanted, and could even play and struggle well with their other dogs.

"Chris Curtin is to be given a lot of credit for his extensive physical therapy, including swimming and regular passive range-of-motion exercise, that contributed to her regaining function of the limb to the level of the elbow," relates Dr. Christiansen. "Early splinting of the leg below the elbow allowed her to use the leg, and prevented contracture of her shoulder and elbow which could have resulted in permanent loss of limb use." Elsie's rehabilitation is due to a true partnership between Chris Curtin the owner, Dr. Jeffrey Christiansen the veterinarian, Rob Sigafos the farrier, and her own drive to recover.