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## Small + large= healing equation in case of foal with leg deformity treated successfully at UF Large Animal Hospital

BY SARAH CAREY

**W**hen a Quarter Horse colt born with a severe right hind limb deformity arrived at the University of Florida's Large Animal Hospital last May, equine veterinarians quickly recognized that traditional methods used for straightening abnormal legs in foals would not work. But four months, three surgeries, and one small animal surgeon later, the foal is living the good life at home in Palmetto, running and training on all four good legs.

"Traditionally, when you perform an acute correction, you break the leg and then plate it, all at once," said Ali Morton, D.V.M., assistant professor of large animal surgery at UF. "In this case, the amount of correction needed would have probably compromised the blood supply and the lower part of the limb likely would have died. There also is a significant risk of infection, which is why these types of procedures often fail in horses, even in the best circumstances."

Morton then consulted one of her small animal counterparts at the UF Veterinary Hospitals — Dan Lewis, D.V.M., a professor of small animal orthopedic surgery at UF and an internationally respected expert on the correction of limb deformities in small animals. For over a decade, Lewis has used circular external skeletal fixators to perform distraction osteogenesis, a technique which allows for slow progressive correction of limb deformities. The deformed bone is cut surgically, but correction is performed by adjusting the external frame to gradually manipulate the secured bone segments to straighten the bone over time. The gap that forms between the two secured bone segments fills in quickly with new bone.

"Dr. Lewis has contributed significantly to the literature on distraction osteogenesis, so we called him, and he looked at the foal's leg," Morton said. "Our biggest concern was its size, since at 5 weeks old, this foal weighed 220 pounds and was much bigger than your average dog."

The foal's case is the first time sequential correction, which employs a circulator fixator and distraction osteogenesis, is believed to have been used to correct a limb deformity in a horse.

Initially the fixator placed on the foal used pins to engage the bone segments, an approach based on what had been traditionally done in horses. But it quickly became evident that pins were not the answer.

"Within 24 hours, the foal bent some of the pins," Morton said. "Within 48 hours, he broke one pin. By then, we were at the point of either trying something different, or euthanasia."

One could say UF's veterinary team was literally down to the wire — the olive wire.

As a last resort, Lewis contacted John Madden from Smith and Nephew, a company that manufactures circular fixators for human patients. The fixator placed on the foal was made from components of a system designed for use in dogs and cats. Madden provided olive wires, which contain a bead, or olive, secured along the wire's length, of appropriate diameter for use in a foal. These wires, when applied under tension, provided the necessary stability to resist the incredible forces imposed by the 220 pound foal.

Lewis was familiar with the product because he had used this human system to successfully stabilize a fracture in a tiger.

"We didn't know what would happen, but we were willing to try," Morton said. She spoke to Anne Prince, owner of the foal, and explained the options.

The Princes own a large and well-respected Quarter Horse farm in Palmetto, and are longtime clients of the UF Veterinary Hospitals.

"Mrs. Prince said, 'Let's try it,'" Morton said. "She said we shouldn't give up unless things got to the point that the foal was suffering. So we took out the broken pins and put in four olive wires, and over the course of the following three weeks, it seemed to be working."

Five weeks later, additional surgery was performed, during which additional wires were placed for reinforcement. Serial radiographs and measurements confirmed that the deformity had been corrected and the distraction gap just needed to fill in with new bone.

"He was continued on antibiotics and his bandage was changed routinely, but as soon as we saw significant evidence of healing, we began more extensive physical therapy, including passive range-of-motion exercises and gradual hand walking," Morton said.

Radiographs continued to be taken to track the leg's progression.

"It took longer than we anticipated," Morton said.

In time the leg had healed to the point that veterinarians began to stage removals of rings and wires. A CT scan was performed on the foal's leg, and he remained at the UF Large Animal Hospital until his discharge on Sept. 15.



On the day of the foal's discharge, Dr. Ali Morton and the UF Large Animal Hospital patient care team presented the foal's owners, Chester and Anne Prince, with a framed photo of their foal, signed by all members of the care team, along with vital "Gator Gear."  
 (Photo by Sarah Carey)



Chester Prince, Dr. Ali Morton, the Prince foal, and Anne Prince.

(Photo by Sarah Carey)

"To my knowledge, this is the first time sequential correction, which employs a circular fixator and distraction osteogenesis, has been used to correct a limb deformity in a horse," said Lewis, the small animal surgeon.

Morton credited Lewis and the foal's owners, the Princes, along with the foal himself for the case's ultimately successful outcome.

"The only reason this worked was first, Dr. Lewis, but also the Princes, who treat all of their animals very well and allowed us to do everything we did," Morton said. "The foal was also an excellent patient the entire time. He put up with all the bandage changes and antibiotics, took care of himself and never got mad at us for poking and prodding."

Morton added that although complications had been faced from the beginning, the UF veterinary team and the foal's owners took "one day at a time" and things slowly improved.

"We'd hoped it would, but in the world of horses, this kind of success doesn't happen very often," Morton said.



Betsy Hunter holds her award plaque outside of the new Small Animal Hospital entrance.



Barbara Boykin is shown in the VAB, where she primarily works, with her award.

## And the winners are...

### Student group names October and November 2010 Appreciation Award Winners

It's always nice to know you're appreciated, and SCAVMA is making a point of saying "thank you" to individuals who are a part of college and UF Veterinary Hospital life, but may not always get that public pat-on-the-back.

SCAVMA's monthly "Appreciation Award" winners for October and November are Sandra "Betsy" Hunter and Barbara Boykin, respectively.

Hunter, October's winner, is an animal care technician who works in the Small Animal Hospital.

Said Jacob Vencil, a sophomore veterinary student and SCAVMA's vice president, "Betsy is the joyful technician that you consistently see working so hard she is sweating."

Among the comments students shared about Hunter were:

"I have seen her head down in the huge trash can by radiology, trying to get that last bit of trash out." And, "She goes above and beyond her job every day and she always has a smile on her face."

Vencil said that in addition to always making time to accommodate requests for help, Hunter shows genuine care for the animal patients, fills in when certain sections are short-staffed and never complains.

Barbara Boykin, November's winner, works on the college's custodial staff.

Comments made about her included, "From when I get here at 8 in the morning until I leave in the afternoon, I always see her keeping things clean. It's little things like wiping down the desks in the library that keep the Veterinary Academic Building looking spotless, which is something we often take for granted."

Another comment was, "She always seems in a pleasant mood and says 'Good Morning' when I pass her in the halls. We appreciate that she does such a good job and always has a smile."



Dr. John Harvey

## Harvey honored for lifetime achievements by International Society for Animal Clinical Pathology

Dr. John W. Harvey, executive associate dean and professor of hematology at the University of Florida College of Veterinary Medicine, has received the 2010 Heiner Sommer Prize from the International Society for Animal Clinical Pathology.

The award is given in recognition of lifetime contributions to the field of animal clinical biochemistry.

As this year's winner, Harvey presented the keynote Heiner Sommer Lecture during the society's 14<sup>th</sup> biannual Congress, held in July at Oregon State University in Corvallis, Oregon.

A board-certified veterinary clinical pathologist, Harvey has been a member of UF's veterinary college faculty since 1974.

His scholastic accomplishments include the publication of 113 refereed papers – many describing syndromes not previously recognized — in both veterinary and human medicine; three books; 46 book chapters; 56 proceedings papers; 65 abstracts and 31 research grants.

He is an accomplished lecturer both nationally and internationally, having participated in more than 250 major seminar engagements throughout the world.

Harvey is a past president and treasurer of the society, and has held numerous leadership roles in other organizations, including the American Society for Veterinary Clinical Pathology, of which he is a past president and board member.

He has served on the examination committee of the American College of Veterinary Pathologists and has been a member of several other national and state veterinary associations.

Earlier this year, Harvey received the 2010 Mark L. Morris, Sr. Lifetime Achievement Award for his lifetime contributions to the field of comparative hematology.

Among Harvey's other awards are the Norden Distinguished Teaching Award, the American Association of Feline Practitioners Research Award, the Alumni Recognition Award from Kansas State University and the American Society for Veterinary Clinical Pathology's Lifetime Achievement Award.

## Oscar-worthy check-up



Dr. Kelvin Kow, a clinical assistant professor of oncology, checks the lymph nodes of this canine patient, named Oscar, while St. George University veterinary student Joshua Morgenstern looks on. (Photo by Russ Bryant)

## Dean joins Aquatic Animal Health team for manatee health assessments



Dean Glen Hoffsis of the UF CVM is shown at rear in orange jacket. Dr. Mike Walsh, to dean's left, is preparing sites for insertion of magnetic identification tags.



Visiting veterinarian Dr. Makio Yanagisawa, from Okinawa Churami Aquarium, monitors the body temperature while restraining a manatee.

Dean Glen Hoffsis joined a team from UF's Aquatic Animal Health program and others on Dec. 7 for the first of two days of manatee captures and health assessments.

This program evaluates a small percentage of manatees twice during the winter from this site to gather information on their health status and how the population is dealing with the cold and changes in the environment over time. More than 80 manatees have been evaluated so far.

"It is the beginning of an already very cold winter season for manatees, so we expected the number of manatees to be high near the warm water sites, and they were," said Dr. Mike Walsh, associate director of UF's Aquatic Animal Health Program.

The captures, which began with temperatures in the low 20s, went as planned with 10 manatees being temporarily restrained while moving between feeding and warming areas. Since local temperatures cannot be easily predicted, the health assessment team, which consists of representatives from the USGS Sirenia Project, Florida's Fish and Wildlife Conservation Commission, U.S. Fish and Wildlife Service, UF's Aquatic Animal Health Program and a large number of other participants, need to protect the manatees from any additional cold stress.

Manatees are very susceptible to cold. Water and air temperatures may vary dramatically as a result of the number and severity of cold fronts hitting the state.

"Temperatures in the 60's make the animals very uncomfortable and can only be endured for a short period. Temperatures in the 40's and 50's can be fatal," Walsh said. "Our goal is to do no additional harm to the animals, so we take extra precautions to make sure they are comfortable and warm during their very short time with us. We use space blankets to help trap their own body heat, and if less than 50 degrees, we bring them into heated tents during the evaluation. In addition we monitor their body temperature and respiratory system and provide them with supplementary oxygen."

Identification chips are inserted under the skin so that the animals can be followed if captured in the future or if they are found dead. A number of other important research projects including genetic studies area also carried out. The CVM team included Ruth Francis Floyd, Don Samuelson, Clair Erlacher, Natalie Hall, Jen McGee, Noel Takehuchi, and Lauren Harshaw.

"At this point most of the manatees examined looked good," Walsh said. "The big question is how will they look in February when the health assessment team will visit again."



Dr. Daniel Brown

## CVM scientist to head international scientific group

Dr. Daniel Brown, a scientist at the University of Florida College of Veterinary Medicine, is chairman-elect for the 2012-2014 biennium of the International Organization for Mycoplasmatology.

An associate professor in the college's department of infectious diseases and pathology, Brown also chaired the scientific program committee for the 18th International Congress of the IOM, which was held in Chianciano Terme, Italy, in July 2010.

Brown's work focuses on genetic and taxonomic analyses of pathogenic mycoplasmas and the diseases they may cause in animals and humans.

His research has been supported by the National Institutes of Health, the U.S. Department of Agriculture, the Morris Animal Foundation, the UF University Scholars Program and the Merck-Merial Veterinary Scholars Program.

The IOM's main objectives include promoting the study of mycoplasmas and related bacteria, and the diseases they cause, by initiating, facilitating and coordinating research and related scientific activities that involve international cooperation; ensuring the open exchange of scientific information; encouraging personal contacts by promoting organizational Congresses; and actively influencing learning through educational programs.

## Associate professor, environmental health specialist Natalie Freeman dies

Dr. Natalie Freeman, an environmental health scientist who held a joint appointment in the colleges of Veterinary Medicine and Public Health and Health Professions, passed away peacefully at Haven Hospice on Nov. 1.

Freeman came to UF after serving for 12 years on the faculty at Robert Wood Johnson Medical School and the School of Public Health, both branches of the University of Medicine and Dentistry of New Jersey and the graduate program in environmental science at Rutgers University.

She was an associate professor and former interim chair of the department of environmental and global health in the college of PHHP, and worked closely with the UF CVM's Center for Environmental and Human Toxicology. Dr. Steve Roberts, the center's director, noted that "Natalie's tireless efforts were instrumental in laying the foundation for creation of the department of environmental and global health. She was a wonderful researcher, educator, and colleague."

According to information provided by the family, Freeman continued her research into children's public health until she was no longer able. One of the first stories written about her after she joined the UF faculty in 2004 noted that while veterinary medicine has always played a role in public health, the use of stuffed animals to conduct research might be a first.

Freeman spoke in the story about how stuffed animal toys were used to evaluate pesticide accumulation in household products.

"Since children sleep with stuffed toys, and at young ages chew on them, understanding the pesticide load in these toys is important for understanding all the routes of exposure that are important for children," Freeman said at the time.

Her work was important in helping to identify contaminants and determining how much is consumed by children from their home environment, said Dr. John Harvey.

"A good environmental health program requires good toxicologists, risk assessors, environmental engineers, analytical chemists and statisticians, as well as exposure assessors," Freeman noted soon after her hiring. "UF has the foundation for that program with superb individuals in all these disciplines."

A memorial service was held in Freeman's honor on Nov. 12 at the Baughman Center on the UF campus.



Dr. Natalie Freeman