Critical care specialists at Ohio State’s Veterinary Medical Center are using novel techniques from human medicine to successfully treat their animal patients.

After a simple enterotomy for a foreign body removal, Isaly’s surgical site ruptured, causing the young Bernese Mountain dog to develop severe septic peritonitis. He was rushed into surgery, which confirmed dehiscence of the enterotomy and gross food contamination. A resection and anastomosis surgery was performed immediately, and Isaly was transferred to the ICU with septic shock – a condition with a mortality rate in animals of more than 90 percent. (continued on page 2)
When it comes to delivering a baby, sometimes it takes only the mother’s efforts – and sometimes it takes a team of professionals. This was the case with an alpaca dam named Elise and her cria.

After Elise had been in labor for five hours without progressing, her owners and her veterinarian agreed she needed to make the two-hour trip to the VMC in Columbus. The team of Drs. Elizabeth Coffman, Amanda Hartnack and Caroline Lodge; three veterinary students; and RVT David Frederick were waiting when she arrived. An ultrasound showed the cria was in normal position but had a very slow and weak heart rate, and a manual examination indicated Elise had a uterine torsion. A rapid delivery was crucial, and everyone on the team worked to get the dam to the floor and turn her in order to relieve the torsion.

“A uterine torsion is an emergency that can be life-threatening for both the dam and cria,” said Dr. Lodge, who headed the team. “Our care staff was able to put things into action, quickly relieve the torsion and resuscitate all parties involved.”

Dr. Lodge and the team suspected that the cria had a systemic infection that developed prior to birth. Due to his low total protein and possible septicemia, he was given an intravenous plasma transfusion. His hypoglycemia was treated with glucose, and he was bottle fed since he was too weak to nurse. But after a week in intensive care, Elise and cria were released with a good prognosis.

“We were thrilled by the positive progress of the cria with our vigorous management, and we were thrilled to send both mom and baby home!” said Dr. Lodge.

In the ICU, Isaly was cared for by a team of criticalists, surgeons and technicians led by Dr. Julien Guillaumin, DACVECC. He decided to treat the dog aggressively with techniques recommended for human sepsis and septic shock: providing Isaly with canine albumin through a continuous rate infusion of cryopoor plasma (for an impressive total of 58 units over six days) and with a constant infusion of antibiotics, a technique that is currently being investigated for human septic shock patients. The team also administered several vasopressors including dopamine and norepinephrine to maintain Isaly’s blood pressure. Neither the use of cryopoor plasma as a source of albumin nor the constant-rate infusion of antibiotics has ever been reported in veterinary medicine.

Unfortunately, due to the severity of the lesions and the sickness of the dog, the second surgical site ruptured. Dr. Guillaumin and the surgical team suspected dehiscence of the anastomosis site and decided to use a food dye through Isaly’s nasogastric tube to confirm — also a novel technique for veterinarians. Consequently, a second resection anastomosis was performed, and Isaly received supportive care in the ICU with a vacuum-assisted closure, which necessitated his fourth and fifth planned surgeries, successfully performed by Dr. Katy Townsend, DAVCS, and her team.

Against the odds, Isaly survived, and after more than two weeks in the ICU he was discharged to the care of his family and is making a full recovery.

“Isaly was definitely a wonderful dog to have,” said Dr. Guillaumin. “And his tale is now well known in the hallways of the Veterinary Medical Center!”

The Veterinary Medical Center – Dublin also offers 24-hour emergency care for ill and injured companion animals, supported by a state-of-the-art intensive care unit and board-certified critical care specialists.
Equine Emergency and Critical Care

Intestinal resection, blood transfusions get horse back into form

Thanks to a group of equine blood donors and the state-of-the-art care from the Galbreath Equine Center’s Emergency and Critical Care (ECC) unit, Tango may be able to return to endurance racing despite a serious abdominal condition.

The 18-year-old Arabian gelding presented to the equine emergency service after being found severely colicky and rolling violently in his stall. When his veterinarian performed a rectal exam, he found distended loops of small intestine, and Tango was transported to Ohio State for referral.

Tango wasn’t colicky on admission, and an initial ultrasound showed only mildly distended small intestine. It also showed swirling, free-fluid in the abdomen, which was discovered to be blood, so the clinicians stabilized him overnight. When a second ultrasound showed a worsened appearance, the horse was taken to exploratory surgery, performed by Dr. Margaret Mudge, DACVS, DACVECC.

“This case was very unusual,” said Dr. Mudge. “A mesenteric lipoma had transiently strangulated the small intestine, but it caused severe tearing of the mesenteric blood vessels – leading to hemoabdomen and a section of devitalized intestine secondary to the disruption of the blood supply.”

Dr. Mudge performed an intestinal resection of seven feet in total, including the ileum and jejunum. Tango required a transfusion of six liters of whole blood during his recovery from surgery.

“We have a group of equine blood donors that rotate through the hospital, so they are readily available to donate fresh whole blood when needed,” said Dr. Mudge.

Blood donors at the Galbreath Center are screened for blood type and antibodies, and they must be large (most are over 1,200 pounds) and easy to handle.

Although Tango is not far out of surgery at the writing of this newsletter, he has recovered well and has a good prognosis for continued recovery.

“His owner tells me she is hoping to get him back to endurance racing,” said Dr. Mudge.

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Annual Open House

The College of Veterinary Medicine is hosting its Annual Open House from 9 a.m. - 3 p.m. on Saturday, April 5. Activities are designed for all ages, including the popular children’s activity center, an exotic animal display and information booths featuring student groups and community organizations. There will also be demonstrations and seminars discussing animal behavior, applying to vet school and careers in veterinary medicine, as well as self-guided tours of the Veterinary Medical Center. Admission is a can of dog or cat food, to be donated to a local animal shelter. For more information about the Open House, please go to: vet.osu.edu/annualopenhouse.
FAQ: Animal Blood Bank

The Ohio State University Animal Blood Bank is among the largest of the six commercial animal blood banks in the United States. We are available 24 hours a day, 365 days a year, and distribute blood products to hospitals and clinics across the country. Our staff includes Dr. Cristina Iazbik, director; Amanda Simons, RVT; and other veterinary assistants.

Q: Do you have products available all the time?
A: Yes. However, if you are planning a surgery ahead of time and know you are going to need blood products, please call us in advance so we can have the product ready for you. Blood components are stored in state-of-the-art freezers and refrigerators in packaging designed to maintain a safe supply for ready access.

Q: How do you obtain the blood products?
A: We acquire our blood products from donor dogs and cats. Most of them are rescued animals that are placed in homes, and typically donate every other month or on demand. Currently, we have actively enrolled 90 dog and 90 cat donors.

Q: What products do you offer?
A: We offer the following:

- Canine and Feline Packed Red Blood Cells (RBCs)
  Used in patients with acute or chronic hemorrhage, hemolysis, renal disease and bone marrow disorders

- Canine and Feline Fresh-frozen Plasma (FFP)
  Contains all clotting factors and albumin; used to treat bleeding due to anticoagulant rodenticide toxicity, liver failure, DIC or congenital clotting deficiencies

- Canine and Feline Frozen Plasma (FP)
  Contains minimal amounts of clotting factors V and VIII, but can be used to treat rodenticide toxicity, hypoproteinemia, pancreatitis, antithrombin deficiency or hemophilia B

- Canine Cryoprecipitate (CRYO)
  Rich in fibrinogen, factor VIII and von Willebrand’s factor; used for the treatment of hemophilia A and von Willebrand’s disease

- Canine Cryopoor Plasma
  Contains all coagulation factors except von Willebrand’s factor and factor VIII, and can be used in the treatment of rodenticide toxicity as well as the replacement of proteins (albumin and immunoglobulins). SHOULD NOT be used to treat von Willebrand’s disease or hemophilia A

Q: What should I do if I have a patient that needs an emergency transfusion?
A: If you need blood products:
   Call (614) 688-8460 for emergencies during these hours: Monday to Friday – 7 a.m. to 5 p.m.
   Call (614) 292-3551 for emergencies after hours and on weekends/holidays

Q: How is the product transported to me?
A: If the blood products need to be sent overnight, we can use either Fedex or UPS.

Q: What are the prices/protocols?
A: See the Blood Bank website at vet.osu.edu/vmc/blood-products. Along with each component and its description, you can access detailed instructions for the indications and safe utilization of the particular component. As one could anticipate, special handling or storage is often required with each product.

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