

VETERINARY VOICE: Tips of the Trade

Surgery - Stem Cell Therapy

What is Regenerative Medicine/Stem Cell Therapy?

The Veterinary Specialty Center of Tucson now offers a new treatment for end stage degenerative joint disease. Utilizing a technology developed by Vet-Stem, surgeons are now using patient-derived stem cells to treat chronic arthritic conditions that are minimally responsive to traditional types of medical and surgical treatments.

How does it work?

Stem cell therapy has recently been widely accepted in both human and veterinary medicine. It has been determined that all adult tissues have primitive cells that are multi-potent. These multi-potent cells (stem cells) can literally differentiate into any type of tissue including cartilage, muscle, skin, brain, etc. Based on this, stem cells are primarily used for tissue regeneration, most commonly for chronically damaged cartilage in degenerative joint disease. However, in addition to tissue regeneration, there is evidence that these primitive stem cells are capable of homing to the injured tissue, where they can send out trophic factors, produce anti-inflammatory effects, and modulate the immune system to aid in cell repair.

What is the procedure?

Adipose tissue is commonly used as a source of stem cells because it has a high healing cell count, it's easy to access with relatively little morbidity to the patient, and it is a renewable resource. Patients are admitted to the hospital for a stem cell collection. Under general anesthesia 30 gm of fat is collected from an incision behind the scapula or within the inguinal region. The sample is shipped that day via FED EX to the Vet- Stem lab for stem cell processing. The stem cells are isolated and shipped back in a sterile syringe within 48 hours of cell collection. The cells can then be injected intra-articularly, intra-lesionally or intravenously. Most patients will show a response to treatment within 60 days. Stem cells can also be banked for up to 20 years so that they can be used again without another collection process.

Does it really work?

There are a variety of arthritic conditions that stem cells are currently being used for. At VCST, Dr. Sharon Shields is certified in stem cell therapy and will determine which patients would be good candidates for stem cell therapy versus other surgical and medical modalities for treatment. Many of the scientific studies have been done with horses and tendon repair and a variety of human conditions. However, the preliminary evidence in canine patients indicates that most patients receiving stem cell therapy have an improved quality of life, improvement in pain control and improvement in overall lameness.

Is there more?

The technology is relatively new. In human medicine, stem cells are being used for a variety of disease processes. Veterinary medicine will likely follow suit and find many more potential uses for this novel therapy.

Questions?

Surgical Experts:

Jim Boulay, DVM, MS, DACVS

Barb Gores, DVM, DACVS

Sharon Shields, DVM, DACVS

The Veterinary Specialty Center of Tucson has board-certified surgeons available for questions and consultations on surgical conditions during the weekdays. A member of the surgery team is on-call 24/7 to provide consultations to VSCT emergency doctors and to perform emergency surgery for patients seen by the VSCT emergency service. Board-certified surgeons have four additional years of training and are certified by the American College of Veterinary Surgeons to assure competency in advanced veterinary surgery.