Stem Cell Therapy

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Less than a decade ago, regenerative medicine wasn't even a blip on the medical radar. Now, it has transitioned into a mainstream veterinary treatment. Considering it is one of the veterinary industry's leading buzzwords, regenerative medicine means little to the average dog lover. Yet it's often coveted as an always-effective medical procedure.

Unfortunately, when it comes to treating dogs with spinal and orthopedic conditions, it's not the panacea some would have you believe it to be. Placed in the hands of a veterinarian with limited regenerative medicine experience, it becomes a more interesting way to waste thousands of dollars.

So let's get the facts straight. What is regenerative medicine and how, when it is considered almost a miracle worker in both human and veterinary medicine, can it do harm under the wrong circumstances?

In veterinary medicine, stem cell therapy is an increasingly common form of regenerative medicine. It works because it involves using the dog's own cells to start the self-healing process. These cells are completely unspecialized; they can become whatever cells they want based on their surrounding environment.

It's like being a son born into a family of die-hard Redskins fans. Before long, he's talking trash on the Eagles and Giants to his buddies at the lunch table.

Much in the same way, stem cells detect their environment and immediately go to work removing, repairing, and replacing damaged tissue. While work begins right away, it's not an overnight process. For the majority of patients, recovery takes about three months.

Currently, stem cell therapy is commonly used to treat osteoarthritis, tendon and ligament injuries, and neurological conditions.

For successful use in soft tissue conditions, there are two hurdles to ensuring full recovery. The first of these is establishing a definitive diagnosis. These conditions are traditionally difficult to diagnose and often do not present themselves on x-rays.

Because of this challenge, a veterinarian might say, "There's something wrong with your dog's shoulder," simply by virtue of the fact that the dog limps on the front leg.

They might prescribe pain medications and tell the owner to rest the dog or refer them to a rehab clinic. Maybe they'd recommend at-home exercises to strengthen the shoulder muscles, too.

For years, I've watched recovery fail time and again because there wasn't a clear diagnosis or the injury was too severe to respond to those standard treatment methods. For veterinarians and pet owners alike, this seemed confusing. It still does.

With the introduction of stem cell therapy, a second hurdled cropped up. Patients started getting these so-called 'miracle injections' and still didn't recover. If these cells had the ability to treat a wide array of soft tissue conditions, why weren't they doing their job? The reality is more complicated than veterinarians simply injecting needles full of magic cells into dogs' shoulders and expecting full recovery in a few months. The initial definitive diagnosis is critical to knowing when, where, and whether to use stem cell therapy.

How do we reach a definitive diagnosis? Veterinarians need to use ultrasound, an imaging device that goes beyond the scope of x-rays and allows for imaging of the patient's soft tissues. They need to know exactly which area of the shoulder is injured and then use that same imaging device to direct the needle into the affected area.

It's not easy. It requires the correct machinery, yes, but the patient must be placed in the hands of a skilled operator who fundamentally understands how to interpret the ultrasound and recognize abnormal anatomy.

Once that diagnosis is established, and in the hands of an experienced veterinarian, collecting stem cells for injection is a relatively straightforward process. Most often, fat tissue is collected from a small incision in the belly and shipped to a university laboratory where the new cells grow for 10 to 14 days before returning to the clinic.

Ensuring positive results, though, comes back into play during injection. It's a two-fold process: establishing a proper diagnosis using ultrasound and relocating that specific area, directing the syringe full of cells into the exact spot.

If the injection is off the mark, the tissues might not heal.

Even if it doesn't do harm, an improperly targeted injection might cost anywhere from $2,000 to $4,000 and produce little to no positive results for the dog. So it's imperative that the treatment be fully understood and correctly executed not just when injecting but from the diagnostic stage. Otherwise, it's not only ineffective—it's costing the owner thousands of dollars.

Used correctly, however, stem cell therapy is a potentially powerful, seemingly magical, treatment for dogs who had previously reached a therapeutic dead end.

For more information, please visit www.vetsportsmedicine.com/surgery/stemcelltherapy.html or request a copy of my Stem Cell Therapy in Dogs white paper by emailing our surgical coordinators (awatson@vosm.com or langle@vosm.com).

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