

SHOCKWAVE Therapy

Treating Orthopedic Injuries in Horses

A new method of treating orthopedic injuries in horses is now available in the Pacific Northwest: "Extracorporeal Shock Wave Therapy" or ESWT. ESWT has been shown to dramatically enhance the rate of soft tissue and bone healing in people and in horses. In this article, the author provides basic background information about ESWT and shares experience from treating approximately 300 cases over the past two years.

What Are Shockwaves?

Shockwaves are strong positive pressure acoustic waves. These waves transmit energy through the skin into deeper tissues where the energy is "released". In order to understand the concept, one might compare a jackhammer to a shockwave unit.

However, the energy wave of the shockwave has very unique characteristics and is extremely fine-tuned in order to achieve the desired physiologic response. In fact, the shockwaves are actually focused to various depths and energy-levels depending on what injury is being treated.

Use In Human Medicine

The first shockwave units were used for pulverizing kidney stones in people (lithotripsy). A lot of excitement was generated because, by using such a device, kidney stones were cured without ever "breaking the skin". These devices are still widely used today for this purpose.

More recently, shockwave units have been used to treat a variety of orthopedic injuries in people. Specifically, ESWT has been used to successfully treat frustrating injuries such as: "tennis elbow", "heel spurs/plantar fasciitis", as well as calcifying tendonitis and delayed union (non-healing) fractures and other injuries.

Which Horses Injuries Respond To ESWT?

ESWT appears to stimulate tissue healing in a broad variety of tissues. As mentioned above, most bone injuries, (fractures, insertional injuries, etc.) will potentially respond to ESWT. For example, favorable responses have been seen after treating

bucked shins, splint-bone injuries, sesamoid-bone injuries and high-suspensory disease, to name a few.

Similarly, some horses with "ringbone", lower hock joint arthritis, and navicular disease have also responded dramatically. Unfortunately, because of the multifactorial nature of these problems, predicting which horses will respond can be challenging. It is important to recognize that not all horses respond. In a retrospective study presented at the annual American Association of Equine Sports Medicine meeting this year, we calculated that approximately 10% of the 45 horses treated for high-suspensory disease did



In addition to being successfully used to treat bucked shins, splint-bone injuries, suspensory, and sesamoid-bone injuries, ESWT has also been successful in treating a variety of soft tissue injuries.

not respond.

ESWT is also used widely for treatment of a variety of soft tissue injuries, including: tendonitis, suspensory ligament injuries and check ligament injuries. In acute (new), injuries a lower energy level is used, whereas older injuries require more energy to achieve the desired response. In many cases, dramatic results are seen. Horses with neck, back and pelvic injuries have also been treated with favorable results.

It is also important to emphasize that in order to have a successful outcome, one must first have an accurate diagnosis of the problem. Once the diagnosis is made, the shockwave machine can be applied to the identified area.

What Is The Treatment Protocol?

ESWT is usually done on an outpatient basis. The horse is brought to the clinic where he/she is sedated before treatment. Many horses also require application of a twitch. Treatment lasts approximately five to 15 minutes. When the sedation has worn off, the horse can ship home.

Treatment protocols vary depending upon the specific injury. Anywhere from one to four treatment sessions are conducted. If more than one treatment is conducted, the treatments are ideally spaced at least 14 days apart. Price varies, depending upon how many "shocks" are administered. One can expect to pay anywhere from \$300 to \$600 per treatment of a horse, (a recent newspaper article quoted between \$2,500-\$7,000 for

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ESWT has had favorable results on many otherwise frustrating cases.

the same treatment on people!)

What Are The Negative Side Effects?

When treated with appropriate dosages, mild soft tissue swelling occasionally occurs. Such swelling is mild, and is gone within 48 hours. No other negative side effects have been identified. One of the best aspects of ESWT is that we are oftentimes able to make a dramatic change in the healing/remodeling process without ever breaking the skin. Very few medical therapeutic modalities operate with this level of safety.

Horse owners should note that ESWT does not fix everything. Furthermore, a small number of cases that "should," respond don't respond. Hopefully, as we learn more, we will be more able to determine which cases do and do not respond.

Conclusions:

The use of ESWT on equine orthopedic injuries is still in its infancy at this time. Because of the cost, ESWT is usually used after traditional therapies have failed. We are finding favorable

results with ESWT, even on many otherwise frustrating cases. After treating over 300 horses over the past two years and watching the responses, it appears that we are only beginning to realize the full potential of ESWT.

Dr. Revenaugh has recently moved from a Multi-Vet Equine Hospital in New Jersey where he was Senior Associate and ran the Bone Scan Department. He recently opened his own Equine Lameness and Diagnostic Center near Portland, Oregon. There he currently treats horses with a large focused ESWT machine. The center will also feature nuclear scintigraphy, (bone scans) as well as other diagnostics.

Dr. Revenaugh has also worked for the United States Equestrian Team since 1997, and has worked as Official Team Veterinarian for the Three Day Event Team, Combined Driving Team and the Jumper Team. He will continue to work for the USET from his practice in Oregon. He can be consulted at (503) 632-9151, or on the internet: REVENAUGH@AOL.COM.