



Shock Wave Therapy Can Help Promote Bone Healing and Reduce Pain

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Shock wave therapy is a treatment that is increasingly used by veterinarians to treat orthopedic problems such as bone fractures and navicular disease. According to Christopher Byron, DVM, Dipl. ACVS, an assistant professor of equine surgery at the University of Illinois (UI), shock wave therapy can promote bone growth and healing and minimize pain.

Contrary to what its name implies, shock wave therapy does not use electrical pulses, but rather high-energy acoustic pulses, much like sound waves, that have the ability to travel readily through soft tissues to effect hard material and tissues such as mineralized deposits or bone.

A shock-wave unit consists of a box that generates the acoustic waves connected to a wand that can be held up to the body to target the waves to a specific site of treatment.

Byron explains, "This therapy has been used in both human and veterinary medicine for many years, but we are discovering new applications for this treatment."

Shock wave therapy was originally used in veterinary medicine to break up kidney stones. Since the acoustic waves can travel through soft tissue, when these waves are directed toward the kidney, they pass right through muscle and kidney tissues. Once these waves meet something hard like a kidney stone, they can fracture the stone apart. Breaking up kidney stones into smaller fragments allows them to be passed through the urine, often eliminating the need for surgical removal of the stones.

Veterinary practitioners have recently discovered more uses for shock wave therapy. Since the acoustic waves can travel through soft tissue and effect hard materials, they can be used to target bones. For bone fractures that aren't healing well in dogs and cats, or for stress fractures in horses, shock wave therapy using low doses of acoustic waves can enhance bone growth and healing two ways: by stimulating osteoclasts, the bone cells that rebuild the bone, and by enhancing the development of new blood vessels.

At the UI teaching hospital, Dr. Byron explains that shock wave therapy is most commonly used to treat ligament problems in horses. Athletic horses can suffer inflammation of the suspensory ligament in the front leg, and shock wave therapy has been effective in reducing pain and promoting healing of this ligament.

Byron has also studied how shock wave therapy can be used to treat navicular disease, a common condition in horses. He found that when used with corrective shoeing, shock wave therapy can alleviate some lameness in the short term.

In addition to providing healing and anti-inflammatory properties, shock wave therapy works two ways to reduce pain. Its anti-inflammatory action reduces the amount of inflammatory biochemicals that cause pain. "In addition, this therapy seems to temporarily disrupt nerve impulse transmission," thus reducing the perception of pain, Byron explains. These pain reducing properties can be very useful for treating dogs and horses with arthritis.

Byron points out that shock wave therapy is not a universal remedy for any orthopedic condition. "It has definite benefits, but the therapy is most effective when used in conjunction with other treatments," such as medical treatment, corrective surgery or shoeing, and rehabilitative physical therapy.

"Orthopedic treatment is still a relatively new application of this technology. We're still discovering potential uses for this therapy."

For more information about shock wave therapy, consult your veterinarian.--*Kim Marie Labak*