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Dog Tips

This Alarming-Sounding Therapy May Actually Be a Godsend to Suffering Pets

Don't be discouraged by its name — it may be the relief you've been hoping for if your pet suffers from any of these painful or crippling conditions. It's helping to return pets back to full activity and improve quality of life, even for those where relief wasn't thought possible.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- A study of 30 dogs with hip osteoarthritis demonstrates the benefits of shockwave therapy (rESWT) to improve lameness, pain and quality of life
- The shockwaves used rESWT are actually high-energy sound waves that are directed to a target treatment area on your dog's body
- There are a number of other conditions in dogs for which shockwave therapy can be beneficial, including hip dysplasia, tendon and ligament injuries and lick granuloma
- Shockwave therapy should be used in conjunction with physical rehabilitation to return dogs to full activity
- Treatment time depends on the strength of the shockwaves and the number of locations being treated

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A team of researchers at the School of Veterinary Medicine and Animal Science, University of São Paulo, Brazil, have studied the effects of radial extracorporeal shockwave treatment (rESWT) on dogs with hip osteoarthritis (OA).[1] The study involved 30 dogs with bilateral hip OA (arthritis in both hips).

The dogs underwent three weekly shockwave treatment sessions on day one of the study, day eight and day 16. Their progress was evaluated using a special pressure walkway that allowed the researchers to measure peak vertical force, vertical impulse and symmetry.

The researchers also evaluated the dogs using a blinded visual analog scale. In addition, the dogs' owners provided input on their pets' level of physical activity, and the researchers collected follow-up data 30, 60 and 90 days after the first shockwave treatment.

At the end of the study, all three measures (peak vertical force, vertical impulse and symmetry) in the treated dogs had improved. The visual analog scale scores also indicated improvement in the dogs' pain and lameness, and their owners reported improved physical activity levels and quality of life as well.

The study authors concluded that shockwave therapy has beneficial effects in dogs with hip OA. Further studies are needed to determine an ideal treatment protocol.

These study results confirm the conclusions reached in a 2007 Austrian study in which similar significant improvement in the same measures was seen in a group of 18 dogs with hip OA.[2]

Shockwave Therapy Explained

Many people hear the word “shockwave” and immediately think of an electrical jolt. But the shockwaves used in veterinary rESWT are high-energy sound waves (acoustic energy) that are directed to a target treatment area on an animal’s body.

The shockwaves trigger the body’s own repair mechanisms, which speeds healing and provides long-term improvement.

The technology uses electrohydraulic technology to generate shockwaves. The high-intensity sound waves interact with the tissues of the body, leading to a beneficial effects including:

- Development of new blood vessels
- Reversal of chronic inflammation
- Stimulation of collagen
- Dissolution of calcium build-up

This activity creates an optimal healing environment, and as the damaged area returns to normal, pain is alleviated and functionality is restored.

When shockwave therapy is applied to areas of non-healing tissue, it may trigger release of acute cytokines that stimulate healing. Accompanying pain relief may be the result of increased serotonin activity in the dorsal horn (located in the spinal cord).

Conditions Successfully Treated with rESWT

In addition to osteoarthritis, shockwave therapy can be beneficial in treating a variety of other disorders in canine companions, including:

- Hip and elbow dysplasia
- Painful scar tissue
- Degenerative joint disease
- Chronic back pain
- Lick granuloma
- Tendon and ligament injuries
- Sesamoiditis (chronic inflammation of bones in the foot)
- Legg-Calve-Perthes disease
- Chronic wound care
- Non-healing fractures

- Trigger points
- Delayed healing fractures
- Acupressure points

Additional Study Results of rESWT in Dogs

- Of four dogs treated for non-healing fractures, three had significant improvement in bone healing following rESWT treatment.[3]
- In a study of dogs with distal radial fracture non-unions (a break near the bottom of the front limb, just above the wrist joint), all dogs that received rESWT showed complete bone healing after 12 weeks, while no dogs in the control group achieved complete bony union.[4]
- In a study of dogs with lameness resulting from soft tissue shoulder conditions, 88% showed improvement after shockwave therapy, with no surgical intervention.[5]
- rESWT was also shown to significantly reduce distal ligament thickening in dogs with inflammation of knee joints following surgery for a CCL rupture.[6]
- Shockwave therapy has proved beneficial in promoting the development of new blood vessels at the bone-tendon interface of the Achilles tendon in dogs.[7]

Currently, there are only unpublished case reports on shockwave therapy for treating chronic wounds in small animals. However, based on its mechanism of action, rESWT may prove valuable in managing skin flaps and difficult and chronic wounds.

What to Expect During and After rESWT Therapy

The equipment used in rESWT can be loud, and the treatment can be uncomfortable, so some animals require sedation. Since shockwave therapy is often used in combination with surgery, some patients may already be anesthetized at the time of treatment.

When treating musculoskeletal conditions, therapy is recommended every two to three weeks for one to three treatments or until symptom improvement or resolution is achieved. Wounds are usually treated once a week for as many weeks as necessary. With arthritis patients, rESWT is typically repeated every six to 12 months as needed. Shockwave therapy should be used in conjunction with physical rehabilitation to return patients to full activity.

Sources and References

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