Extracorporeal Shock Wave Therapy (ESWT)

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History

- Shock waves used in human medicine as early as 1980s:
  - Break down tissue
    - Kidney stones
  - Promote healing in bone and soft tissue such as
    - Delayed bone healing
    - Stress fractures
    - Plantar fasciitis (heel spur)
    - Tennis elbow
    - Rotator cuff/ Achilles’ tendon injuries
Mechanism of action for healing

Mechanical energy from shock waves →
release of growth factors

- Stimulation of blood flow
- Increased bone production
ESWT in Horses

- Dorsal metacarpal disease (bucked shins)
- Osteoarthritis
- Navicular disease
- Third carpal bone disease
- Suspensory desmitis
- Tendinitis
- Curb
- Sore back musculature
ESWT in Horses
Bucked shins
A recent study of five racehorses with severe disease, including four with stress fractures, treated with ESWT, tiludronate, and a regimen of controlled exercise
- All returned to race without recurrence of disease
- Average 109 days to first start
Proximal suspensory desmitis

- Chronic cases can be difficult to treat and recurrence is common.
- Studies have shown shock wave therapy to improve long term prognosis.
Protocols in our practice: rehabilitation following acute injury

- Bucked shins/ tendon/ suspensory lesion:
  - Shock wave (2000 shocks) under standing sedation
  - Hand-walk for one day, then jog two weeks
  - Repeat this cycle twice
  - If horse responding well, begin galloping
Suspensory desmitis
Superficial digital flexor tendinitis
Deep digital flexor tendinitis
Protocols in our practice: therapy for chronic problems

- 3rd carpal bone disease
- Bone spavin (osteoarthritis in the hock)
- Curb
- Sore back musculature

Protocol:
- Shock wave (2000 shocks) under standing sedation
- Walk a few days, then jog a few days
- No fast works for 10 days (horse goes on vet’s list)
Future applications

- **Wounds**: a controlled study showed wounds on distal limbs of horses treated with ESWT healed with less inflammation and proud flesh (excessive granulation tissue) than controls.

- **Burns**: a recent case study suggests ESWT may improve the outcome of burn cases.
Third carpal bone disease
References


Acknowledgements