

MR5 ACTIVet PRO

Bowed Tendon

This condition refers to any swelling or tear within the front or hind limbs' superficial or deep digital flexor tendons. Tendonitis is any clinical or pathological disorder involving inflammation within the tendon cells. Tenosynovitis is inflammation within the actual tendon sheath. A tendon rupture results when repetitive stress or strain to these tendon fibers becomes severe. When the swelling and inflammation worsen, there is a visible prominence. This visible prominence is referred to as a "Bowed Tendon." At this point, the inflammation within the tendon fibers is so severe that it has resulted in a degenerative localization, resulting in structural damage to the tendon, tears, hemorrhage, edema, and pain.

The first step in acute care is to stop internal hemorrhaging. If laser therapy is applied before the cessation of these micro or macro hemorrhaging vessels, the hemorrhaging **could continue**. The first step in care is to alternate the application of ice and cold water.

An ultrasound study will thoroughly assess and define the damaged areas.

Consider adding generic ultrasound of this lesion here

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: Use the Priority Principle to determine the appropriate settings.

General Guidelines:

- Applying 15 seconds of light in any location, using any settings, delivers a therapeutic dose.
 - Initiate treatment by applying it along the spine, targeting the spinal nerves and innervating the distal limb of the lesion.
 - Apply at an angle towards the dorsal root ganglion as it emerges from the spine for 15 seconds.
 - Then, move along the width of the laser's head to the area where each spinal nerve emerges and repeat.
 - This stage of the treatment is complete when all the dorsal root ganglion of all the spinal nerves for that limb are treated.
 - Application during subsequent treatments can either use this point-to-point technique of 15 seconds per point or calculate the total treatment time of the area and apply it in a sweeping technique.

Insert a QR code here that links to a short video demonstrating this application technique.

Acute Phase: (hemorrhage has ceased)

Treat on-contact if possible and non-contact if painful. Attach Dome Probe (insert photo)

Pain:

- 1000 Hz – treat along the spine where the spinal nerves that innervate this limb emerge at 15 **seconds** per spot or in a scanning technique **1cm/sec** involving all of these nerves.
- scanning technique from just below the knee, following the branches of the palmar nerve, proximally to distally, to the fetlock. Adjust the setting to indicate whether the pain is severe, moderate, or mild. Recommendation of a setting of 1000 Hz

Inflammation:

- Apply red light only in a scanning technique **1cm/sec**, distal to proximal, suggesting 50Hz

Increase oxygenation to the area:

- Emitting at 50 Hz, hold stationary over the closest main artery for 5 minutes. This increases vasodilation of the **capillaries?**, increasing oxygen to the lesion and providing a hyperbaric chamber effect.

Swelling and Edema:

- Treating distal to proximal, utilize Ohshiro's Method to open pathways for drainage. 1000-3000 Hz, **direct** contact.

If pain is severe, treatment twice a day may be warranted.

Sub-Acute Phase: Pain is subsiding but still present.

General Principals:

- Setting: 5-250Hz – always moving emitter distal to proximal.
- Place laser **directly on skin** and apply below, on and above injury site, coming in from all sides of the leg.
 - On-contact, on the tendon at the back of the leg, starting below the ankle **with emitter stationary at each** spot for 15 seconds; move up the width of the Laser's head, **repeat with stationary** for 15 seconds, repeating until you reach the back of the knee.
 - When applying therapy from the lateral or medial side of leg, checkerboard the locations (eg hold at base of tendon on right side for 15 seconds, and when you move up the width of the Laser head, slide around to the left side, then repeat until reaching knee.
 - The tendon isn't very thick so checkerboarding is necessary to avoid going into an inhibitory dose.

- Treat BID for 5 days, take 2-days off, start up again doing SID for a week. 2 days off. Return with alternate day treatments for 2 weeks.
 - As the injury site heals, begin reducing the **dose delivery** time. For example, 15 seconds per spot will now be 10 seconds per spot, followed by 5.
 - The laser is dose-dependent, and the size of the injury dictates the volume of photons required. If at any point during treatment the healing plateaus, take a day or two off and begin again with a reduced application time.

Pain: Patient **may be very** uncomfortable when first initiating therapy.

- 1000-3000Hz; initiate by applying therapy directly over the closest lymph node and pulsing for 5 minutes. Then, with the same setting, apply the laser with a sweeping motion, distal to proximal only, for 5-10 minutes, depending on the size of the horse, ensuring to cover the whole circumference of the leg.

Inflammation: Utilizing red light only, administer according to the stage of Inflammation. (See information on red light in fundamental section)

If pain becomes more intense or swelling increases at any point, increase the pain and swelling/edema treatment times and follow the nerve pathways both medially and laterally.

Rehab and Recovery Phase: (treat at least three out of seven days till recheck)

General Concept: Set **frequency** at 1000Hz and slowly scan (1cm per second) along the full length of the tendon around the ankle joint capsule and knee to help keep tendon fibers straight and tight and improve functional strength and ROM.

Inflammation: apply red light only to the lesions with good margins.

Swelling/Edema: Ohshiro's Method

Tissue Repair: apply on-contact; 250 Hz, approximately two minutes scanning the entire injured area **1cm/sec**.

Blood Flow: apply on-contact; five minutes.

Range of Motion: apply point to point for 1 – 2 minutes while putting the tendon through **P?ROM** exercises.

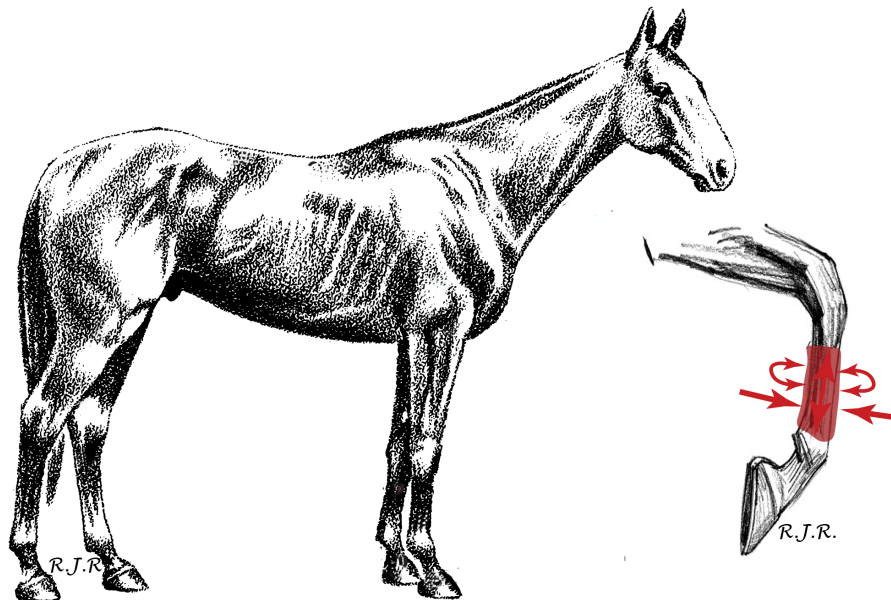
Insert a QR code here that links to a short video demonstrating this application technique.

Ultrasound study at 30 days to evaluate healing process. Can use my case from below or place a generic one that has healed

Images and Illustrations:



Illustrations to use if we want to illustrate treatment techniques. I can make these any size. Crop just the front end of the horse or enlarge the metacarpus area.



This would be a good place for before and after IRTIs.

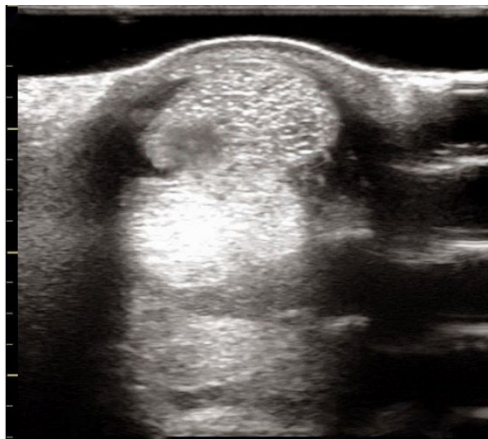
From my case records:

Seven years old Warmblood. Acutely lame RF, 3/5 on a straight trot after a competition.

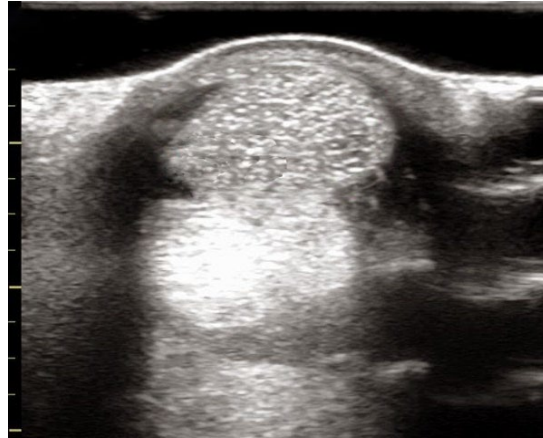
Initiation of laser therapy



Day 14



Day 48



My illustration for the acupuncture points:

Acupuncture points for metacarpal pain:

Bowed tendon, superficial and deep tendon strains, suspensory desmitis:

BL 18, BL 19, GB 34, KI 3, LV 3, LI 4, TH 1, PC 9

