Proceedings of the
18th Annual Meeting of the
Italian Association of Equine Veterinarians
SIVE

Feb. 3-5, 2012 - Bologna, Italy

Next SIVE Meeting:
Feb. 1-3, 2013 – Arezzo, Italy

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Management of Soft Tissue Injuries of Pastern/Fetlock Region in Sport Horses

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Olympics 2004

Superficial Digital Flexor Tendonitis

Proceedings of the Annual Meeting of the Italian Association of Equine Veterinarians, Bologna, Italy 2012
**Soft tissue Injuries**

**Jumpers**

**Landing**

SDF >> SL >> DDF

Landing Over 1.2 m Jumps
Results In 80% Force To Rupture Of SDF
Decrease tensile stress with age

**Fatigue**

Forces Move From SDF to SL
May Explain Reason for SL injuries in jumpers over time

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**Athens Olympics, 2004**

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**Jumpers/Dressage**

23 horses (1-3/5 lame)

- Suspensory Desmitis 16
  - Body or branchus (14)
  - Proximal (2)
  - 2 retired or DNC
- Digital sheath effusion 1
- Pesanectasia solea (3)
- Sesamoid M.U. I
- NSP 1
- Oblique Sesamoidean Lig. (2)

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Show Jumpers

- Significant Superficial Digital Flexor Injuries
- Fatigue
- Shoes/Studs
- Cumulative injury
- Traumatic injury
- Reducing Injury
- Speed
- Height, Type, Numbers of Jumps

Olympics 2000

Eventers n=47

Pre-competition (n=14):
1 horse completed 3DE
5 did not compete
3 prox suspensory desmitis
2 SDF (bilateral)
2 eliminated phase D
SDF tendinitis
6 retired, phase B or D
Suspensory branch desmitis
1 SDF tendinitis
15 other injuries

Soft tissue Injuries

Eventers (team 60%, Individual 61% Finished)

Out phase B

Trace ≤ 63.9 mm²
≥ 167.9 mm²
Diagnostic Analgesia of the Proximal Suspensory Ligament of the Pelvic Limb.

Deep Branch Of Lateral Plantar N.

Diagnostic Analgesia of the Proximal Suspensory Ligament of the Pelvic Limb.

8 year old Hanoverian

Diagnostic Evaluation
- Plantar Digital Anesthesia: NSF
- Plantar (abaxial) Anesthesia: NSF
- Low 4/6 point Anesthesia: NSF
- High plantar block (rear)

Post High Block
11 Year Old Warmblood Jumper

History:
2 wks before major show was having hind end problems.

11 Year Old Warmblood Jumper
Preblocking High Plantar Block
11 Year Old Warmblood Jumper
Preblocking
High Plantar Block

11 Year Old Warmblood Jumper

What's the difference between the two cases?
Case I

Case II

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Suspensory vs Distal Tarsal Joints

- Initially block up the leg
- If the lameness blocks at high plantar level then proceed with other diagnostics (radiology, ultrasound)
- If negative on u/s block distal hock joints by themselves

Concerns With High Plantar Blocking

Tarsometatarsal Injections

Articular Anesthesia: TMT 5 mls
Shock Waves vs. Pressure Waves

Shock wave (electro-magnetic)
100-1000 bar

Portable Systems

Mode of Interaction of Shock Waves

- With the exception of direct disintegration of stones or effects on bone
- Possible Healing Effects
  - Induces Neovascularization
  - Increase expression of various growth factors in bone and tendon
  - Facilitate recruitment of mesenchymal stem cells
  - Interacts with myelin resulting in an analgesic effect
Shockwave Therapy At The Olympics

- 28 Horses (before & after)
  - Suspensory Ligament (18)
  - Fetlock Osteoarthritis (1)
  - Pastern Osteoarthritis (2)
  - Distal Radius, Carpal Canal (1)
  - Navicular (1)
  - Tendons SDF (5, after)

Analgesic Effect

- Right Hind Lameness

Analgesic Effect

- 342.3 mm²

FEI & Racing Rules Changed
Performance: 10 year old Jumper

50 days post SW treatment

Additional Treatments Modalities

Injections
Acell Vet (www.acell.com)
Stem Cells (www.stem.com)
Insulin Growth Factor (IGF-I)
Tendonophin
Promega Limited, Adelaide Australia
Appears to have an antiinflammatory effect
Potent anabolic effect
Bone Marrow
Mesenchymal stem cells (pluripotent cells)
Various growth factors

INTRAARTICULAR INJECTION OF PLATELET RICH PLASMA FOR SUSPENSORY LIGAMENT DISMITIS IN STANDARDBREED HORSES: A CASE SERIES
Proceeding Annual Meeting ECVS, Dublin 2007
Vetinary Surgery (2007) 36 (3) E17

- 9 horses with desmits of the midbody of the suspensory ligament (4 front, 5 hind).
- Treatment with single intralesional injection PRP
- All horses returned to racing after 26-68 w.
- "PRP can be safely used in horses and may represent a novel, valuable alternative and/or adjunctive treatment option in horses with midbody SLD"
Suspensory Ligament Therapy
Fasciotomy of the deep plantar metatarsal fascia

Plantar metatarsal neuroectomy & fasciotomy for the Rx of hindlimb proximal suspensory desmitis.
Andrew F. Bathe, ACVS 2007
Deep laminar plantar metatarsal fascia

Neurectomy Deep Br. LPN
Lateral approach
Monitoring Progress

- Key is monitoring tendon/ligament response to increased loading as horse progresses through controlled exercise program.
- 2 month scans throughout rehab and as horse returns to competition.
- Parameters:
  - Cross-sectional area - stable or improved
  - Echogenicity - should be improved if acute, stable if chronic
  - Fiber pattern - Same as echogenicity
- Once stable, if see increased CSA, horse needs to back off in work. If see new hypoechoic areas or evidence of new fiber tearing, horse needs to stop.

12 Year Old Jumper

History:
Increased edema over tendon at proximal MT-III

12 Year Old Jumper

History:
Increased edema over tendon at proximal MT-III