Diseases of tendons, tendon sheath and bursae

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Associated structures

• Endotendon: fine connective tissue between the strands in a tendon
• Peritendon (peritenon): the connective tissue structures attached to and surrounding a tendon
• Paratendon (paratenon): loose connective tissue filling the interstices of the fascial compartment in which a tendon is situated and which allows it to move freely; is not organized into discrete tendon sheaths.
• Mesotendon: the connective tissue sheath attaching a tendon to its synovial sheath
• Tendon sheath (epitendineum): white fibrous sheath surrounding a tendon

Tendon anatomy

• Primery secondary and tertiary tendon bundles
• Components: collagen

Mechanical properties

• Low extensibility
• Due to stress- elastic and viscoelastic phase – and rupture
• Approximately 3% of extension,
• Dissappearance of the wave form and helices
• 3-5% of extension: partial rupture
• More than 5-6% of extension: total rupture

Tendon injuries

• Tendon wounds
  • Cause, symptoms, treatment, prognosis
• Tendon rupture
  • Fibrillar damage, partial or total rupture

Tendinitis

• Acute
• Chronic (aseptic)
• Septic
Tendinitis

- Pathogenesis
  - Stress
  - Degenerative changes
  - Heat
  - Hypoxia

Tendinitis - healing

- Extrinsic way (peritendon, mesotendon, paratendon)
  - Intrinsic way (fibroblasts)

NO REGENERATION! - BUT REPARATION! Instead of collagen I. —— collagen III. fibres

Acute tendinitis clinical examination

- Visual examination at rest
- Palpation
- Visual examination at exercise
- Ultrasonography
- Other diagnostic possibilities
  - X-ray
  - Scintigraphy
  - CT
  - MRI

Acute tendinitis – conservative treatment

- Systemic (NSAID, Corticosteroids?)
- Local
  - Cold, icepacs, topical DMSO
  - Pressure bandage, light cast
  - Subacute
    - Peritendinous hyaluronic acid (Hylartil inj)
    - Intratendinous PSGAG (Adequan i.a.inj)
  - Shock wave therapy (in more chronic form!)
  - Stem cells

Tendinitis surgical treatment

- Desmotomy of the prox. accessory lig.
  - Tendon splitting

Blisters??? - Firing???

Advices for high level competitive showjumpers (Lieve Vandekeybus DVM Belgium)

- Keep the number of jumps below 50/ training
- Keep number of jumps below 12 before course
- Above 12 y do not have a 6 weeks or more off
- Keep horses in regular exercise above 12 y if competing on high level
  - Weekly 1 jumping training
  - Exercise every day, no long resting period! (>6 weeks)
  - CK and ASAT levels below 300U/
Tendon sheath disorders

- Non-infectious Tenosynovitis of the DFTS
- Accumulative low grade trauma (normal exercise)
- Acute trauma (e.g., overreach)
- Abnormal force (hyperextension)
- Clinical signs
- Treatment: rest, bandage immobilisation, cold therapy
  - Systemic AID therapy: short acting corticosteroid (e.g., dexamethasone phosphat 0,06 mg/kg iv.) + NSAID therapy (flunixin or phenylbutazone)
  - In 7-14 days intrathecal *hyaluronic acid* and *corticosteroid* (?) inj.
Septic inflammation of the DFTS

- Infectious Tenosynovitis
  - Penetrating wound
  - Intrathecal injection (iatrogenic)
  - Diagnosis: severe lameness(?) heat, effusion
  - Treatment: AB therapy, synovial debridement, drainage
  - Failure to return to intended use; because of adhesion and fibrosis
  - 7-14 days after injury: hyaluronic acid, repeated in 14 days

Diseases of bursae

- Acquired or congenital bursae
- Subcutaneous: calcaneal, carpal, olecranon etc.
- Subtendinous: navicular, bicipital, cunean, gastrocnemius
- Subligamentous: lig navelae
- Submuscular:

Types:
- Acute aseptic bursitis
- Chronic aseptic
- Septic