

Performance Lameness in Reining Horses

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Types of lameness

- **Arthritis**

- Any type of joint inflammation
 - Hock, pastern, stifle, coffin joints
 - Most often “wear-and-tear”, cumulative stress
 - Following injury
 - Developmental Diseases: “D.O.D.”
- Usually worsens during flexion test
- Diagnosis: Radiographs, Ultrasound, CT/MRI



- **Soft Tissue**

- Tendons, Ligaments, Muscles, Bursa
- Usually improves with rest, worsens after work
- Diagnosis: Ultrasound, CT/MRI



Recognizing Lameness

- **Forelimb lameness** \Rightarrow “Head-bob”
- “Unloading” the sore forelimb
- Landing heavier on opposite forelimb
- * 80% of forelimb lameness is from fetlock or lower *

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Recognizing Lameness

- **Hindlimb lameness** \Rightarrow “Hip-hike”
- Greater height AND depth on the lame leg
- * Majority of hindlimb lamenesses are hock pain *

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Arthritis Prevention?

- Wear-and-Tear vs One Traumatic Event
- Fitness
- Conformation abnormalities initiate arthritis
- Balanced shoeing and trimming

- Oral Supplements
 - Glucosamine + Chondroitin
 - MSM, Yucca Root
 - Avocado Unsaponifiables: “ASU”
 - Oral H.A?

- Injectable Supplements
 - Legend
 - Adequan
 - Their “knock-offs”

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Hock Lameness

- **The classic wear-and-tear type of arthritis**
- **Most Common:**
 - Progressive arthritis in joints of the lower hock □
 - Tarsometatarsal + Distal Intertarsal
- **Less Common:**
 - OCD fragments in the top hock joint (tibiotarsal)
 - Arthritis in the upper hock joints
 - Usually follows trauma (e.g. fractures or infection)

Diagnosis: Lameness Exam, Radiographs

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Treating Hock Arthritis

- Legend and Adequan
- Joint Injections
 - “Cortisone”
 - Low-motion joints:
 - Less long-term risks
 - Less Consequence of cartilage injury
- End-Stage Disease
 - Fusion
 - Surgical Fusion
 - “Drill the Hocks”
 - Laser Fusion
 - Chemical Fusion
 - Old School - M.I.A: Severe inflammation and Pain
 - New Research - EtOH: DECREASED discomfort, ultimate fusion



Pastern Joint Arthritis

- “Ring-Bone”
- Wear-and-Tear
 - Gradually increasing inflammation over months or years
- Acute Trauma
 - Collateral Ligament Tears

- Diagnosis:
 - Where?
 - Nerve and/or Joint Blocks
 - What?
 - Radiographs



Pastern Joint - Treatments

- Joint Injections:
 - Cortisone
 - IRAP
- End-stage Disease
 - EtOH injections
 - No published research on treating Pastern
 - Surgical Joint Fusion



Heel Pain



- Aka “Navicular Disease”
- Navicular Bone is rarely the problem
 - Instead:
 - Deep Digital Flexor Tendon
 - Sesamoidean Ligaments
 - Collateral Ligaments (Pastern, Coffin Jts.)
 - Navicular Bursa, Impar Lig.
 - Suspensory Lig. of Navicular

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Treatments

- *Trimming and shoeing:
 - Hoof-pastern Axis:
 - Maintaining strong, wide heels
 - Minimizing the toe to ease Break-Over
- “Bute” as needed
 - Side Effects
 - Does not treat the primary inflammation
- Shockwave
 - Minimize pain
 - Stimulate soft-tissue healing
- Navicular Bursa Injections
 - Symptomatic Therapy
- Coffin Joint Injections
 - Coffin Joint Pain may be a component
 - “Reservoir” for treating the entire region



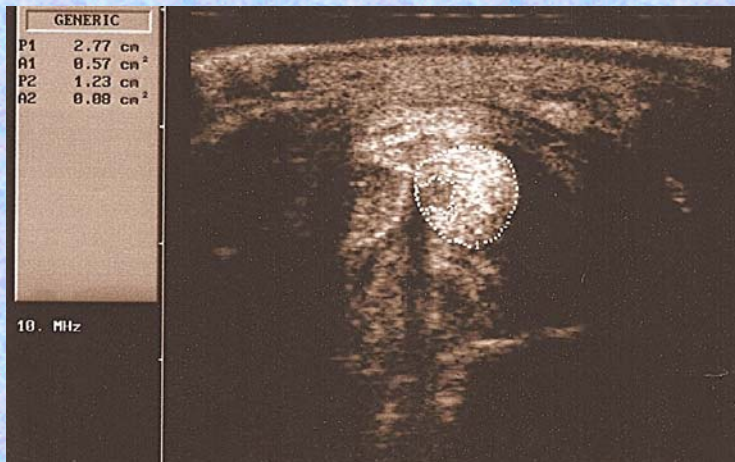
Soft Tissue Injury

- Tendons and Ligaments are fiber bundles
 - When fibers tear: Produces pain, weakens the entire unit
- Classically:
 - Occur with rapid change in direction
 - More Frequent with deep footing
 - Moderate Intermittent Lameness
 - Worse towards outside of circle
- Diagnosis:
 - Where? Nerve Blocks
 - What?
 - * Ultrasound *
 - MRI



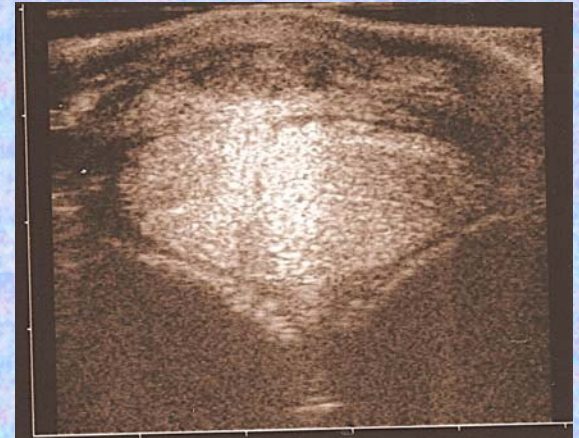
Suspensory Ligament

- Occurs during sliding stops
- Suspensory Branches
 - Just above the fetlock joint
- Origin of the Suspensory
 - Just below the knee/hock



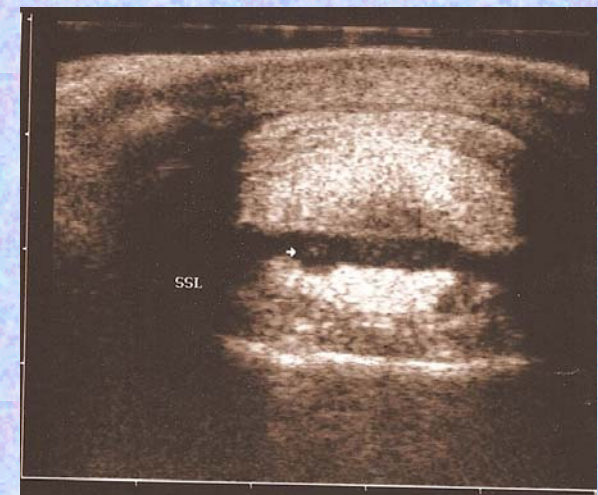
Flexor Tendon Injuries

- Mild “Bow”: Peritendinous Swelling
 - E.g. “Bandage Bow”
 - Short-Term Rest - Weeks
- Severe “Bow”:
 - Fiber Tearing
 - Long-term rest - Months
- The Classic Soft Tissue Injury
 - Early: Obvious to See and feel
 - Late: May palpates normal
 - Minimal Lameness without extended work



Collateral Ligaments

- Collateral: “CO”-lateral
 - Injury follows twisting and shearing trauma
 - Worst in deep footing
 - Provides stability to joints
 - Medial to Lateral Support
 - Wrapping can support collateral ligaments
- Response to Injury
 - Varying Degrees of Instability
 - Joint is unstable : new bone formation



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Ligament Injury Treatments

- Ice Early (first 24 hrs)
 - Ice Boots
- Heat Late (after 24 hrs)
 - Therapeutic Ultrasound
 - Lasers
- REST
- REST
- REST
- Stem-Cell Injections
- Platelet-Rich Plasma
- Shock-wave



Developmental Orthopedic Diseases, “D.O.D”

- A group of developmental conditions all related to lameness in growing horses
- Combination of genetics, diet, and environment
- Angular Limb Deformities = “Crooked Legs”
- O.C.D. = Cartilage Flap Defects
= Bone Cyst Defects
- “Wobblers”



Angular Limb Deformities

- Possible Risk Factors:
 - Position in Utero
 - Selenium Deficiency
 - Other nutrients?
 - Pre-maturity and Dysmaturity
 - Crushing of small bones in knees/hocks
 - Rapid Growth
 - Excessive Calories
 - Abnormal Insulin/Glucose regulation?



Treatments

- Hoof Extensions
- Minimize muscle/tendon contracture
 - Heavy Bandages
 - Splints/Casts
 - Medications
 - Oxytetracycline
 - Low-Dose Bute
- Surgery: “Strip + Screw”
 - “Strip”: Periosteal Elevation
 - Stimulates growth on the “short” side
 - “Screw”: Transphyseal Bridge
 - Slows growth on the “long” side



OCD: Osteochondrosis Dessicans

- “Failure of Endochondral Ossification”
- Abnormal Bone Formation
 - Cysts
 - Bone Fragments
 - Cartilage Flaps
- Fast-growing Foals
- Riskiest Age?
 - 2-7 months



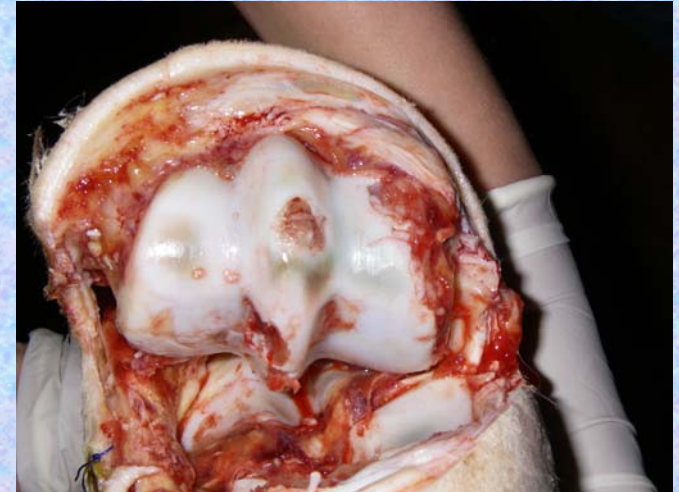
OCD Causes

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- Genetic Risks:
 - OCD is very rare in wild horses
 - Breeding Affected to Affected: >50% Rate of OCD
- Nutritional Risks for Weak Bone, Cartilage:
 - Energy Levels
 - Avoid Simple Sugars
 - Produce rapid growth
 - Increased Insulin Effect: Insulin, IGF-I + II, Thyroid Effects
 - Micronutrients (Phosphorus)
 - Excess phosphorus weakens bone + cartilage
 - Micronutrients (Copper):
 - Provide Adequate Copper: At least 10 ppm
 - Avoid excess Zinc (Decreases Copper availability)

O.C.D.

- Clinical Signs
 - Joint Swelling + Lameness
 - Clinically healthy Otherwise
- Locations:
 - Hock Joints
 - Top (Large) Hock Joint
 - Distal Intermediate Ridge of the Tibia
 - Stifle Joints
 - Medial Femoral Condyle
 - Lateral Trochlear Ridge
 - Can occur in any joint
 - Neck Joints
 - One cause of “wobblers”



OCD Treatments

- Best Defense is A Good Offense
 - Minimize Rapid Growth
 - Careful Feeding:
 - Moderate Calories
 - Adequate Copper
 - Avoid Excess Zinc
 - Anti-O.C.D. complete feeds and supplements
- Medical Treatments
 - Joint Injections
 - IRAP vs. Cortisone
 - Usually not definitive
- Surgical Treatments:
 - Arthroscopic debridement of bone fragments
 - Stem-Cell Injections/Bone Grafts

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Thank You!!

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