Upper Extremity Orthopedic Concerns

IMPLICATIONS FOR THERAPEUTIC HORSEMANSHIP

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- THERAPEUTIC PROGRAMMING COORDINATOR – CKN IN LEXINGTON, KENTUCKY
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Background

- Occupational Therapist
- Upper Extremity Specialist
- Research and Development
- Sports and High Intensity rehab
- Post Surgical Hand Therapy
- Industrial Rehabilitation
- Ergonomics
- Work Hardening
- Work Conditioning
- Employment Testing

- Clinical Instructor
- Horses, Humans and Health Minor program Advisor and Program Contact
- PATH Registered Level Instructor

History of working in Therapeutic Horsemanship and EAAT programming since 1999

Working towards HPCS

Upper Extremity Anatomy and Mobility

Key points:
- Joints
  - Shoulder (girdle)
  - AC Joint
  - SC Joint
  - GH Joint
  - Scapulothoracic “Joint”
- Elbow
- Wrist
- Finger joints

Common Diagnoses and Injuries

If you have questions... just ask

Topics Covered
- Basic anatomy of injury
- Impact on horsemanship
- How to address within a horsemanship session

Rotator Cuff Injuries and Surgeries

What is the Rotator Cuff (RTC)?
- 4 muscles that support GH joint

What does the RTC do?
- Stabilizes the humerus in the glenoid fossa
- Provides primary or secondary movement of shoulder into primary planes of motion

What do you need to know about the RTC?
- Engages with all movement of shoulder
- Engages with all functional activity of the arm
- If someone is less than 6 weeks from a RTC injury or surgery you should always consult with a physician
- 6 weeks is average soft tissue healing time
Other Shoulder Pathologies

- Arthritis
- AC joint or GH joint
- Impingement Syndrome
- Thoracic Outlet Syndrome
- SLAP Lesion/Tear
- Dislocation
- AC Separation
- Fractures
  - Clavicle, humerus, scapula

Elbow Injuries

- Radial Head Fractures
  - Commonly occurs from a Fall On an Outstretched Hand (FOOSH)
  - Non-displaced fractures
    - Generally stable and heal quickly
    - In a sling in public for 2 weeks
    - Most of the time there are limited long term complications
  - Displaced or comminuted (multiple pieces) fractures
    - Generally require a radial head replacement or removal
    - Limitations into supination (palm up position) noted after injury

Rotator Cuff Injuries and Surgeries, Cont

- Comorbidities
  - Stiffness in the thoracic spine
  - Pain at the AC joint
  - Pain noted centrally in arc of movement – 70 to 110 degrees of abduction
- Precautions/Suggestions for movement
  - Any overhead movement only done if/when pain free
  - Avoid palm down overhead movement
  - Watch for scapular hike (shoulder blades lifting to aid shoulder movement) during movement indicating weakness

Rotator Cuff Injuries and Surgeries, Cont.

- How to help in non mounted activities
  - Modify the grooming/saddling environment to stay out of painful arc
  - Warm up/ground work of horse to engage arm in non-painful movement arc
- How to help horseback
  - Trunk rotation exercises
  - Scapular retraction exercises
  - Half halts to address scapular retraction
  - Single arm raises and sweeps
  - Weight bearing on withers seated or in two point
  - “Round pen arms”

Elbow Injuries

- Long term implications
  - Generally lack about 15 degrees of extension regardless of method of repair/stabilization
  - Lack full supination after recovery
- How to help in a horsemanship session?
  - During grooming utilize end range stretching during functional activities
  - Yoga like warm up exercises to address full elbow extension
  - Horseback warrior poses
  - Darts or other similar throwing exercises
  - Overhead throwing – hay

Tennis Elbow – Lateral Epicondylitis

- Golfers Elbow – Medial Epicondylitis

- What are they?
  - Inflammatory process due typically to overuse of the inner or outer muscle attachment point on the elbow
  - Due to overuse of the wrist and forearm muscles
- Typical treatment
  - Anti-inflammatory, NSAIDs
  - Bracing/splinting
  - Progressive resistance exercises

Image Credit:
https://www.sobelspineandsports.com/new-treatment-for-tennis-elbow/
Medial and Lateral Epicondylitis – Cont

- General treatment includes:
  - Pain Control
  - Ergonomic Management
  - Avoid palm down positions
  - Avoid wrist down pinching
  - Avoid combined wrist and elbow flexion (especially while sleeping)

- Impacts on horsemanship:
  - Modify rein use to maintain wrist in neutral or slight extension
  - Monitor tool use while grooming

- Common to see this in leaders/sidewalkers
  - Consider trading sides for sidewalkers to avoid stress of painful body part
  - Use a larger/thicker lead line for leaders to avoid a tight grip

Carpal Tunnel Syndrome

- Comes from nerve compression at the carpal level of the wrist
- Results in numbness in thumb side of hand, weakness and muscle wasting in thenar eminence (muscles at base of thumb)

- Avoid palm down pinch activities
- Avoid flexed wrist postures

Wrist and Forearm Injuries

- Distal Radius Fracture
  - Fracture of the far end of the weight bearing forearm bone at the wrist level
  - Varied medical names; most tend to come from a FOOSH type movement (either forward or backwards)
  - Can be casted with good results if the fracture is stable
  - Can require surgical intervention if:
    - Fracture displacement
    - Fracture is comminuted
    - Blood flow is inhibited

- Ulnar Positive Wrist
  - Pain with pronation/supination and deviation of wrist

- Scapho-Lunate (SL) Ligament Injury/Tear
  - Pain with gripping
  - Weak grip
  - Loss of mobility
    - Typically loss of extension
    - Necessary for weight bearing

- Common complications post fracture or surgical intervention
  - Ulnar Positive Wrist
  - Pain with pronation/supination and deviation of wrist

- Narrowed (Thumb-CMC) arthritis
  - Articular changes at the base of the thumb
- Metacarpal Phalangeal Joint Arthritis (knuckles)
- Interphalangeal Joint Arthritis (finger joints)
  - Arthritis in other joints of the fingers
  - Can result from injuries or use

Hand Injuries and Pathologies

- Basilar (Thumb-CMC) arthritis
- Metacarpal Phalangeal Joint Arthritis (knuckles)
- Interphalangeal Joint Arthritis (finger joints)
  - Arthritis in other joints of the fingers
  - Pain control
  - Ergonomic Management
  - Avoid combined wrist and elbow flexion (especially while sleeping)

- Impacts on horsemanship:
  - Modify rein use to maintain wrist in neutral or slight extension
  - Monitor tool use while grooming

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Rheumatoid Arthritic Changes

- Autoimmune mediated joint changes
  - Concurrent with a variety of other immune mediated changes across the body
  - Varies levels of instability across the joints depending on progression of disease

Hand and Finger Pathologies

- Impacts on horsemanship
  - Be very aware of joint stability when choosing reins
  - Can do grooming but may need modified grooming tools
  - Keep tools inside a warm tack room especially in cooler months
  - Kids grooming tools make great options as they are often smaller and have handles
  - Avoid activities that pinch thumb up next to palm, instead encourage activities that utilize thumb like it is pushing a remote control button or pinching a bead with tip

Questions?

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