Diagnosis and Treatment of Cervical, T-L spine, and SI joint pain

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Signalment Cervical pain (OA)

• Middle-aged performance horse
• Usually presents as poor or change in performance
• Behavior change doesn’t match horse personality

Lecture Outline

• I Cervical spine
• II Thoraco-Lumbar pain
• III Sacroiliac pain
• Historical data of horse
• Approach to exam
• Diagnostics
• Treatment
• Case examples

Signalment

• Common in horses that need collection or turn
• Eventers
• Jumpers
• Dressage
• Barrel racing
History
- Crabby attitude
- Reduced willingness to flex
- Holds neck in neutral or extended position
- Will work going 1 direction but not opposite
- Bolts when asked to turn/flex neck

History
- Resists taking the bit
- Resists palpation of poll or ears
- History of a fall or pulled back when tied
- Grazes with 1 forelimb forward

Clinical exam
- Visual exam of cervical atrophy 1 side
- Palpable asymmetry or boney lump
- Repeatable pain response upon digital palpation
Cervical muscle atrophy

Neck flexibility test Normal

Abnormal neck flexibility

Clinical Signs

Complete lameness and neurologic exam, EPM testing

7% of cervical OA horses were ataxic; usually mild

Impingement due to swollen soft tissue tissues not always boney OA

Neck pain can cause a non-blockable forelimb lameness
Anatomy

C5-C6 and C6-C7 most common

Radiographic technique

- Lateral-medial views
- Obliques La45D-LaVO
- Ventral dorsal best if in dorsal recumbency under IV anesthesia
- Min-Ray TR90
- C1-4 80 KvP 0.14 sec
- C4-6 90 KvP 0.20 sec
- C6-7 100 KvP 0.30 sec

Diagnostics - Radiology

Lesions seen < 50% of time
- Sclerosis
- OA
- Enlarged facets
- Boney proliferation
Radiographs

Decreased joint space, sclerosis, boney proliferation

Diagnosis Nuclear scintigraphy

Nuclear scintigraphy

Rewarding
C5-C6
C6-C7
$450
**Treatment**
- NSAIDs
- Adequan etc
- Decrease Work load
- Cervical facet injections
- Mesotherapy
- Acupuncture
- Lasers
- Shock wave

**Cervical facet injection**
- Find correct facet with ultrasound
- Mark spot prior to scrubbing

**Video finding correct injection location**

**Cervical facet injection**
- Find correct facet with ultrasound
- Mark spot prior to scrubbing
- 7.5 linear or 6.0 curvilinear Ultrasound probe
- Needle bisects us probe
Aseptic technique

- Sterile glove on probe
- Alcohol inside glove
- Alcohol on injection site after sterile scrub

Video neck injection

Crab claw = joint space
Often US detects irregular facets better than rads

- 18 ga. 3" spinal needle
- 5 ml syringe
- 125 mg amikacin
- 1.5 mls Depo medrol (60 mg)
- 3 mls sarapin
Medications

- Derived from pitcher plant
- Relieves neuralgic pain with no effect on motor nerves
- Ammonium ion antagonist
- Stops C fiber potentials
- Long duration of action

$50.00

Post injection

- 2 grams Bute SID for 7 days
- 2 weeks rest
- No neck flexion for 2 weeks
- Gradual return to work

Complications

- Infection
- Dural penetration
- Failure to improve

Mesotherapy

- Developed 1952 in France
- Intradermal injection of drugs
- Stimulates giant fibers in mesoderm
- Inhibits information (pain) conduction in dorsal horn of spinal cord
Mesotherapy in horses

- Used in cervical and back pain or painful scars
- Multi injector syringe
- (5) 27 g x 4 mm needles in a linear pattern

Mesotherapy

- 5 mls flucort or betamethasone
- 20 mls sarapin
- 20 mls carbocaine to increase volume of distribution
- 30 mls LRS
- Inject at 1 inch increments

Mesotherapyworldwide.com $10/needle can re-use if sterile

Mesotherapy

- Improvement w/in 7 days
- Some need repeat tx after 2 to 3 weeks
- Duration varies with condition about 3 to 6 mos.
11 yo QH used for poles

- Progressive decrease in time of run over last several months
- Resists turning to left
- Can’t bridle horse due to extreme pain in poll region

Initial Exam

- Grade 2 ataxia
- Not lame
- Boney lump R side of neck
- Can’t touch poll
- Poor neck flexibility
- C5-6, C6-7 injection bilateral
- Mesotherapy

Video pole run pre-injection

Video 4 wks post injection
Follow-up

- 1st treatment May 2013, horse returned to normal performance after 3 weeks, no poll pain
- Returned Feb 2014 due to decreased performance (8 mos), no lameness or ataxia, improved neck flexibility, repeated Rx

5 yo jumper

- Recent import and prepurchase
- Grand prix jumper
- Jumps 4+ feet
- Jumps with head low
- Worse with added work and at end of exercise period

5 yo jumper

Exam 5 yo jumper

Muscle fasciculation/discomfort with forelimb manipulation
8 yo Western Pleasure Horse

- Won world show 2012
- Last several months bolts when asked to turn head to right even with trainer
- Bilateral forelimb lameness responded to DIP joint meds, hocks, stifles injected elsewhere
- Referred for nuclear scintigraphy
- Cannot stop horse when he bolts
- Hospitalized trainer
- Behavior change
Thoracic-Lumbar back pain

Bone pathology
  Dorsal spinous processes Impingement (DSPI)
  Facet joint arthritis

Soft tissue pain
  Epaxial muscle strain
  Supraspinous or Interspinous ligament desmitis

Anatomy
  • T1-T10 Dorso-caudal
  • T10-T15 Straight
  • T16-T18 Dorso-cranial
  • Lumbar Dorso-cranial

Anatomy
  • Supraspinous ligament (1)
  • Interspinous ligament (2)
  • Facet joint (5)
Signalment
• Performance horses
• Cutting horses
• Barrel racing
• Jumpers
• 3 day Eventers
• Dressage
• Flat racing
• Trotters

Historical data
• Often times clinical signs appear after a traumatic incident
• Fall, trailer accident
• Chiropractor

History very important- owner complaints
• Kicking/bucking at canter
• Resists bending 1 direction over other
• Poor quality canter
• Cross canters
• Difficult transitions from trot to canter
• Poor jumping technique
• Resists being saddled
• Pins ears when groomed
• Lack of propulsion
• Irritability

Video sore back
**Rule out**
- Poor rider
- Poor saddle/tack fit
- Can cause back pain
- Thermography
- Change rider for a period of time

**Thoracic vertebrae = poor trot**
- Poor engagement at trot
- Extended trot difficult
- Refusal to go downhill
- Lateral movement is difficult
- Goes L or R after landing when jumping

**Lumbar vertebrae = poor canter/walk**
- Bunny hop canter
- Toe drag hindlimbs
- Downward transitions difficult
- Refusal to jump
- Poor engagement at canter
- Rearing
- Reduced stride length behind

**Clinical exam – bone vs soft tissue**
- Need to determine if spinous process pain, facet pain or soft tissue
- Dictates treatment

Adams 2011
Back exam video

Clinical Exam
• Lameness exam
• Neurologic exam
• Evaluate horse being saddled
• Evaluate under saddle
• 4 grams IV Bute if unsure then re-exam after 1 to 2 hrs

Diagnostics
• Local anesthesia
• IDSP 60 to 80 mls carbocaine around DSP
• 20 ga. 1.5” needle
• Look in 20 min

Nuclear scintigraphy
• Very useful to detect bone inflammation
• Poor for soft tissues
• Not 100% reliable
• Lateral and oblique views
Radiology

- T12-18 90 KvP 0.14-.20 sec
- Lumbar 90 KvP 0.3 to 0.36 sec
- Mini-Ray 90 machine
- Marker

Ultrasound

- 7.5 – 10 MHz probe for superficial structures
- 5-2.5 MHZ facets
- Rectal probe for L-S

Ultrasound

- Median and transverse supraspinous lig
- Desmitis

Treatment

- Based on lesion location (s)
- DSP impingement – 89% of 644
- Dorsal articular facet OA- 12%
- Soft tissue
- Supra or Interspinous lig desmitis
- Epaxial m. inflammation or spasm
DSP impingement

• Commonly T10-T18 (esp T15-T17)
• Can occur T10-L6
• Interspinous injection
• Mesotherapy
• IV Tildren
• Shock wave

DSPI – Interspinous process injection

• Mark spot on back with rads, white out or skin staple
• Detomidine sedation, stocks, sterile scrub
• Aseptic technique

DSPI injection

• 20 ga 1.5 or 3” needle
• 40 mg depomedrol
• 10 mg betamethasone or 6 mg triamcinolone
• 125 mg amikacin
• Qs 5 ml syringe with Sarapin
• 5 mls each site

DSPI injection

• 2 weeks off, don’t respond to added rest
• 2 gms Bute SID x 10 days
• 6+ mos. relief
• Prognosis depends on job and # of spines involved
Mesotherapy intradermal injection

- Especially if epaxial muscle palpate painful
- Combined w/ DSP injections
- Caudal orientation of segmental n. so extend caudally
- 10 mls carbocaine, 10 mls sarapin, 10 mls Traumeel, 5 mls betamethasone, qs to 100 mls with LRS

Begin 4 cm off midline and additional rows 4 cm apart

Allen 2010

Mesotherapy

- Several different plants
- Flavonoids
- Witch hazel
- Marigold
- Yarrow
- ??

Shock wave

- Useful and non-invasive for boney lesions
- IDSP and facet OA
- IDSP 35 mm probe
- Facet OA 80 mm probe, abaxially bilateral
- 1500-2000 pulses

Tildren - Biophosphonate

- Boney lesions
- 1.0 mg/kg in 1 liter saline IV over 1 hour
- Slows bone remodeling
- Anti-inflammatory
- Degrading enzymatic scavenger
- Repeat q 4 mos.
**Methocarbamol**

- Oral erratically absorbed
- 50 mg/kg PO q 12 h
- Or 10 mg/kg IV slowly q 12 h

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**Surgical options for IDSP**

- When medial therapy fails
- Case selection important
- **Subtotal ostectomy**
  - 4-5 cm removed
  - 3 mos rehab exercise program
  - 70-85% return to full function

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**Interspinous ligament desmotomy**

- Coomer 2012
- Standing sx
- DSP’s separation
- 95% of 68 horses returned to use

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**Interspinous ligament desmotomy**

- 2 cases at TAMU
- 1 fracture DSP 3 mos post op
Vertebral facet OA

- Often park hindlimbs out
- Looks like trying to urinate
- Can be performance limiting

Radiology

- Sclerotic facets
- Boney proliferation
- This horse poor sx candidate DSP

Video
Vertebral facet arthritis

- Ultrasound guided facet injection
- 20 ga 3” spinal needle
- 40 mg Depo Medrol + 12 mg triamcinolone + 125 mg amikacin

Adams 2012

Vertebral facet arthritis

- 1 to 2 months NSAIDS (1 gm daily)
- Tildren and/or methocarbamol
- Shock wave
- Pasture turnout 4 to 6 weeks
- Controlled exercise program next 3 to 6 months

Dyson/Ross 2011
**Prognosis**

- Racing T > L
- Barrels L > T
- 3 Day and jumpers don’t do as well as Dressage horses
- Racing trotters do poorly

**Epaxial muscle pain**

- 1 or secondary
- W or w/o boney issue
- Very common
- Esp lumbar and croup area

**Epaxial muscle infiltration**

- Facial plane of longissimus dorsi m
- 4 cm off midline
- 20 ga. 1.5 needles
- Entire painful area
- 1 inch increments

**Muscle contractions**

**Epaxial muscle infiltration**

- 30 ml syringe
- 5 mls betamethasone/vetalog
- 3 mls 20 mg/ml Depo
- 1 ml amikacin
- 10 mls sarapin
- 10 mls carbocaine
- Inject 5 mls/site

Methocarbamol
Post injection

• 2 grams Bute SID for 1 week then 1 gram SID 2nd week
• No riding for 3 to 4 weeks
• Gradual return to use

Prognosis

• Good/ Excellent
• Pain relief in 4 to 7 days
• Often time only needs 1 injection
• Break the pain and inflammation cycle
• Owners like laser therapy
Supraspinous ligament desmitis

- Localized thickness and pain
- 4-6 weeks rest
- NSAIDS
- Mesotherapy
- Shock wave
- 3 month controlled exercise program

Sacroiliac joint injection

- 5 mls each short and long acting steroid
- 1 ml amikacin
- 5 mls sarapin

12 yo Team roping horse

18 ga 25 cm needle #ESJN 1525
$30 Specialty Vet Products
251-656-6973
Video SI injection

Ultrasound guided SI injection

Treatment

More than 1 way to skin a cat

Lots of variation

Goal is to reduce inflammation and pain

Return horse to previous performance