

Equine Lameness

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Lameness

- Lameness associated pain can be localized by physical exam, palpation, response to hoof testers, response to flexion tests, and by the use of anesthetics

Anesthetics

- Regional vs. Intra-articular
- Regional desensitizes a particular area
- IA desensitizes synovial structures

Palmar digital nerve block

- Deposit 1-2 mls local anesthetic over both the medial and lateral palmar digital nerves just proximal to the collateral cartilages using a 22-25 gauge needle
- Blocks the heels, caudal 1/3 of the foot, and most of the sole

Common diseases that respond to PD block

- Bruised heels from concussive forces
- Hoof abscesses- often do not block completely to PD
- Navicular syndrome/underrun heels
- Partial response:
- P3 fracture
- Pedal osteitis-demineralization of P3 due to chronic inflammation from a variety of causes

Common diseases that respond to PD block

- Inflammation of coffin joint or navicular bursae
- Minimal or no response:
- Septic coffin joint or navicular bursae

Abaxial sesamoid nerve block

- Deposit 1-3 mls of local anesthetic over the medial and lateral palmar digital nerves at the base of the abaxial aspect of the sesamoid bones using a 23-25 gauge needle
- Blocks from proximal pastern distally
- Does not block the fetlock joint

Common diseases that respond to abaxial block

- Degenerative joint disease (DJD) of the proximal interphalangeal joint (high ringbone)
- DJD of the DIP joint (low ringbone)
- Canker- rare, chronic hypertrophic pododermatitis. Frond like hypertrophy of the frog caused infection and unsanitary conditions. Deformed appearance to frog lameness, foul, cream colored discharge

Common diseases that respond to abaxial block

- Quittor- necrosis of the lateral cartilage. Caused by trauma to hoof allowing bacterial infestation, often have a chronic draining tract . TX: sx debridement
- PX: good if no coffin bone or joint involvement
- Gravel- abscess of white line, migrates up laminae and breaks out at coronary band or heel bulbs. TX- drainage
- Abscess, P3 fx

Common diseases that respond to abaxial block

- Laminitis: inflammation of the sensitive laminae of the hoof wall. Numerous inciting factors that result in alteration of blood flow through foot (most recently thought to be post capillary constriction of venules). Can result in mild pain, rotation of the coffin bone away from the hoof capsule due to separation of primary and secondary dermal and epidermal papillae

Common diseases that respond to abaxial block

- Can also sink due to laminar separation
- TX: restoration of blood flow, remove inciting cause if possible, control pain, prevent further damage, support frog
- PX- depends on severity of disease

Common diseases that respond to abaxial block

- Septic pastern joint
- FX of P1 or P2

Low four point or low Volar nerve block

- Deposit local anesthetic over the medial and lateral palmar and palmar metacarpal nerves. Insert needle at distal aspect of MC2 and MC4, and between suspensory and DDFT at the same level
- Blocks from distal 1/3 of MC3 distally

Common Dz that respond to a low four point or low Volar nerve block

OCD lesions of fetlock, most commonly near sagittal ridge or condyles. Usually in yearlings or 2 yr. olds. Often bilateral
Present with mild distension of joint and variable lameness

- TX: Arthroscopic Sx to remove flap or curet cysts
- PX: Good for sagittal ridge lesions, poor for palmar condylar lesions

Common Dz that respond to a low four point or low Volar nerve block

Degenerative joint dz(arthritis)

- Common dz in middle to older working horses
- DX: regional anesthesia and rads
- Tx: IA corticosteroids, NSAIDS

Common Dz that respond to a low four point or low Volar nerve block

Villonodular synovitis: proliferative synovial mass in the dorsal pouch of the fetlock

- Cause: ?? Chronic hyperextension during racing
- Presentation: Pronounced joint effusion, pain on flexion
- TX: Sx excision

Common Dz that respond to a low four point or low Volar nerve block

Sesamoid fx: types 1) apical 2) mid-body 3) basilar 4) abaxial 5) axial/sagittal 6) comminuted

- Severe acute lameness, marked joint distension
- Tx: If less than 1/3 Sx removal, of large fixation with wires
- Px: Depends on suspensory damage

Common Dz that respond to a low four point or low Volar nerve block

Sesamoiditis: enthesiopathy(periostitis)
inflammation of sesamoid bones

- Dz of 3-4 yr. olds, suspensory matures faster than sesamoid bones
- Rads: Vascular channels/mottled appearance
- Tx: ?? Rest, often flares up when training resumes

Common Dz that respond to a low four point or low Volar nerve block

Constriction of annular ligament: annular ligament constricts the digital tendon sheath, secondary to tendonitis or tenosynovitis

- Variable lameness, bulge in palmar or plantar fetlock region
- TX: Annular ligament desmotomy
- Px: Depends on degree of tendon damage and adhesion formation

Common Dz that respond to a low four point or low Volar nerve block

Lateral condylar fx

- TB race horses
- Often complete and displaced
- TX: SX stabilization
- PX: Good if non-displaced, poor for displaced

Common Dz that respond to a low four point or low Volar nerve block

Medial condylar fx

- TB racehorses
- Usually non-displaced
- Usually spread up the leg
- TX: SX
- PX: Good, smooth anesthetic recovery is important

High Volar or high four point

- Can be blocked with a high Volar or high 4 point
- Blocks palmar carpal and palmar metacarpal nerves
- Desensitizes metacarpal region

Common Dz that block to a high Volar

Dorsal MC DZ/bucked shins/periostitis of dorsal MC region

- Acute lameness, variable degree, often sore on palpation, heat, swelling
- Rads: WNL acutely, then subperiosteal lysis, thickened soft tissue, then dorsal cortical thickening
- Tx: rest +/- Extracorporeal shock wave therapy (ESWT), slow return to work

Common Dz that block to a high Volar

Dorsal cortical fx: most often on lateral aspect of MC3, MC2 hypertrophies first and creates stress on dorsolateral cortex

- Pain, reluctance to work, subperiosteal callus
- TX: rest, osteostixis, ESWT

Common Dz that block to a high Volar

Sequestra

- Very common in MC and MT 3 area
- Soft tissue swelling around a draining tract
- TX: SX removal
- 3 components: 1) sequestrum-dead infected bone 2) involucrum- fibrous/bony area along parent bone 3) cloaca-open tract
- Px: Good

Common Dz that block to a high Volar

Exostosis of MC 2/4

- ??insult to ligament between MC 2 and 3 is disrupted by rapid weight gain or excessive work, tears lead to hematoma formation>fibrous tissue> bone with mottled appearance
- Cosmetic blemish, usually not lame
- Can be removed SX but often reccur

Common Dz that block to a high Volar

Splint fx

- All splint fx > lameness, heat, swelling
- Rads
- Sx removal, stabilization if involves proximal aspect (1/3)
- Splint fx will often heal by 2 intention, depends on location and configuration
- Do not damage suspensory at sx, or score palmar aspect of MC3

Common Dz that block to a high Volar

SDFT(high bow)

- Lameness, swelling over palmar cannon
- U/S
- TX: rest, ESWT, often reccur

Common Dz that block to a high Volar

DDFT (low bow)

- Disruption of a portion of the DDFT
- Swelling in palmar fetlock region
- U/S
- TX: rest, ESWT, often reccur

Common Dz that block to a high Volar

Suspensory desmitis

- Common cause of lameness in performance horses
- U/S
- TX: rest, ESWT

Common Dz that block to a high Volar

Tendon ruptures

- SDFT- dropped fetlock
- DDFT- toe comes off of ground in weight bearing phase
- TX: sx to repair tendon, often unrewarding, cast limb to immobilize it

DZ of the carpus

Carpal chip fx

- Hyperextension at speed in race horses
- Distal Rc bone, proximal Ic bone, distal lateral radius, proximal C3(#1 in Standardbreds), proximal Rc bone
- Effusion in joint, flexion tests, IA anesthesia
- Rads: obliques, DP, flexed lateral(Ic shifts above Rc bone), skyline(slab)

DZ of the carpus

Carpal chips fx

- Tx: ***arthroscopic Sx***, rest, NSAIDS, IA HA
- Px: Depends on degree of cartilage damage, which can only be assessed during sx

DZ of the carpus

C3 slab fx

- Acute onset of marked lameness
- Marked joint effusion
- Rads before trotting, flexing, or blocking
- TX: Sx with lag screw fixation
- PX: better if treated early, depends on collateral damage

DZ of the carpus

Carpal hygroma

- Synovial swelling over dorsal aspect of carpus, acquired bursa from trauma
- Not usually lame, fluid aspiration of mainly serum
- TX: pressure bandage, drainage-often reccur

Dz of growth plates

Epiphysitis

- Not inflammation
- Dysplasia of growth plates
- ??? Diet of low calcium/high phosphorus
- Pain, heat, swelling of growth plates
- Rads: metaphyseal flaringsclerosis adjacent to epiphysis, irregular width of physis
- Dz of young horses

Dz of growth plates

Epiphysitis

- Tx: stall rest, decrease grain in diet
- PX: Good

Physeal fx

Dz of young animals, closing of growth plates varies between areas in the body

Dz of the Elbow

Olecranon fx

- Occur in foals/weanlings
- Dropped elbow stance, swelling of elbow region, unable to lock carpus
- ***SX plating***
- Good PX
- Can rarely see OCD in elbow

Dz of the Elbow

Radial nerve paralysis: runs along the lateral aspect of the humerus under brachialis and lateral head of triceps

- Caused by direct trauma or prolonged lateral recumbency
- Dropped elbow stance, if lower can see knuckling over of the carpus, fetlock, and pastern
- TX: NSAIDS, steroids, time

Dz of the Shoulder

Shoulder

- Often incriminated by owners>rarely the real cause of lameness
- Often shortened cranial phase of stride with affected leg on the outside of the circle
- Can see OCD lesions, DJD, fx
- Sweeney- suprascapular nerve injury>atrophy of supra and infraspinatus muscles, crosses cranial edge of scapula, anesthetic complication, direct trauma
- TX: stall rest, NSAIDS

Dz of the Tarsus

Bone spavin

Osteoarthritis of the DIT/TMT joints

- Most common dz of hock
- Mild intermittent lameness > marked lameness, often warm out of lameness, no effusion palpable, often secondary back soreness
- DX: lameness exam, flexion tests, IA anesthesia, rads- spurring along dorsal surface of central, third, second and fourth tarsal bones
- TX: IA corticosteroids, NSAIDS, rest, fusion

Dz of the Tarsus

Bog spavin

- Effusion of the tarsocrural joint
- OCD in young horses, common sites

1) Distal intermediate ridge of the tibia 2) lateral trochlear ridge of the talus 3) medial malleolus of the distal tibia 4) medial trochlear ridge of the talus 5) lateral malleolus of the distal tibia

OCD fragments usually cause inflammation but no lameness

Dz of the Tarsus

Bog spavin

- TX: fragments can be surgically removed, often do not cause problems if left in

Dz of the Tarsus

Slab fx of third and central tarsal bones

- Much like C3 slabs, marked lameness and effusion

Standardbred racehorses develop cunean bursitis

- TX: cunean tenectomy (cutting the medial and lateral branches of the cranial tibial muscle, also called “cutting the jacks”)

Dz of the Tarsus

Curb-inflammation or tearing of the long plantar ligament

- Painful swelling on plantar aspect of the calcaneus, with chronicity lameness usually resolves
- TX: stall rest, leaves cosmetic blemish

Dz of the Tarsus

Hygroma- capped hock, direct trauma to the point of the hock

- False bursa between the skin and SDFT develops, prominent, fluctuant swelling over the point of the hock, not usually lame
- TX: rest, can drain
- PX: Good

Dz of the Tarsus

Stringhalt

- Involuntary flexion of the hind limb during movement, can be unilateral or bilateral, unknown etiology
- DX: characteristic gait
- TX: lateral digital extensor tenectomy, inconsistent results

Dz of the Tarsus

Thoroughpin- inflammation of the tarsal sheath of the DDFT

- Swelling over the plantar aspect of the hock, usually more caudal than bog spavin, and fluid does not shift across the joint under digital pressure
- TX: Cosmetic blemish, no lameness, no effective treatment

Dz of the Tarsus

Rupture of peroneus tertius- forms the cranial part of the reciprocating apparatus.

Caused by over extension of the hock (caught in fence), or by exertion during a fast start

- Hock will extend without extending the stifle, can manually extend the stifle, characteristic dimpling of the achilles tendon

Dz of the Tarsus

Ruptured common calcaneane tendon

- Dropping hock to ground
- TX: tenorrhaphy, casting or splinting, very unrewarding tx

Dz of the stifle

Fibrotic myopathy

- Repeated tearing or straining of the fibers of the semitendinosus muscle
- Caused by fibrosing or adhesions after an insult to the muscle
- Can occur secondary to IM injections
- Characteristic goose stepping gait. Shortened cranial phase, with the leg snapping caudally just before impacting the ground

Dz of the stifle

Fibrotic myopathy

- ***TX: semitendinosus tenotomy*** or myotomy and post-op exercise, or complete excision of the scar tissue

Dz of the stifle

- FP and medial FT joint communicate , medial and lateral FT do not communicate, lateral FT and FP communicate 15% of time
 - Gonitis- inflammation of the stifle
- OCD lesions in medial femoral condyles, lateral and medial trochlear ridges, articular surface of the patella-varying lameness, synovial effusion, positive response to stifle flexion

Dz of the stifle

OCD

- TX: SX debridement, varying degrees of success

Dz of the stifle

Upward fixation of the patella- medial patellar ligament hooks over the medial trochlea of the femur, locks the limb in extension, does not unlock normally

- Straight conformation, poor body condition may predispose
- Can unlock manually, or by backing horse up
- TX: Conditioning, exercising over logs, medial patellar desmotomy
- Very common in miniature horses
- Complication of desmotomy is DJD

Dz of the hip and pelvis

Fx tuber coxae

- Knocked down hip
- Traumatic injury, running through narrow door or catching hip on corner
- Obvious asymmetry in pelvis
- Lameness due to muscle injury, usually improves with time

Dz of the hip and pelvis

Subluxation of sacro-iliac joint

- Hunters bump/jumpers bump
- Affected side of sacrum is pushed up
- Variable lameness, usually improves with time, never goes away completely

Dz of the hip and pelvis

Pelvic fx

- Traumatic injury
- Unilateral lameness, carry limb rotated outward
- Pubic symphysis fx- very lame bilaterally
- Ileal shaft fx-very lame unilateral
- Can lacerate the internal iliac artery and die
- DX: rectal exam/vaginal exam
- Extended stall rest
- Px: Good for survival