Question

You are suspicious of tendonitis in a horse. You ultrasound the superficial digital flexor and see several anechoic regions within the tendon. What is your ultrasonographic impression?

- This horse is likely affected with acute tendonitis
- The anechoic regions represent blood vessels
- This is a normal ultrasonographic finding
- These are non-specific findings that cannot be interpreted

Explanation - The correct answer is this horse is likely affected with **acute tendonitis**. The anechoic regions on ultrasound are areas of hemorrhage and loss of tendon fibers. As the injury heals, the swelling will decrease and the echogenicity will return to normal. Ultrasonography of tendons is useful in detecting changes in echogenicity, tendon size, and fiber pattern, which are all features of tendonitis. Treatment is directed at halting further inflammation and preventing further fiber damage.

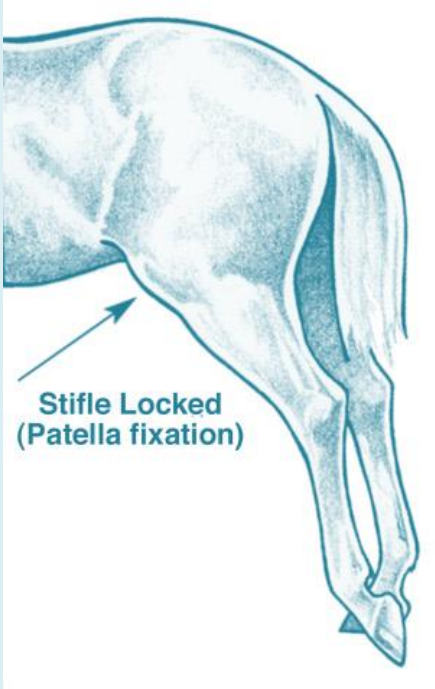
Question

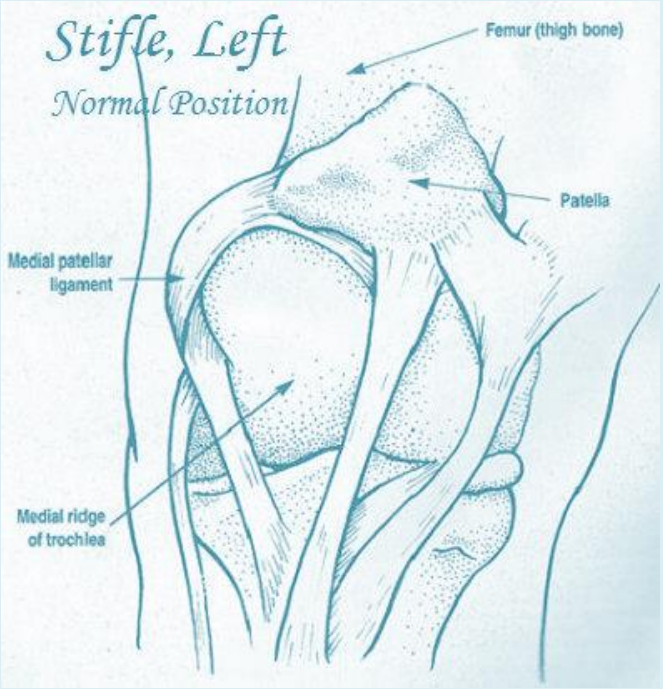
A 1-year old pony presents to you for lameness evaluation. You observe the pony walking and note that the left pelvic limb locks in rigid extension and there is a delay in flexion of the stifle resulting in the horse dragging the toe. You also note excessive wear on the toe, presumably from repeated dragging. Which of the following is the most specific diagnosis?

- Thoroughpin
- Gonitis
- Upward patellar fixation
- Jack spavin
- Stringhalt

Explanation - Upward patellar fixation causes the gait described above. Any horse that has the hind limb in rigid extension and is unable to flex it should be suspected of having this problem. One condition that can mimic this gait is luxation of the coxofemoral joint which can lead to an inability to flex the hind limb but this can be distinguished clinically because the limb will not be extended.

Normally, when horses are standing and resting their hindlimbs, the patella elevates to the top of the femoral trochlea, and the medial patellar ligament hooks over the medial ridge of the trochlea, locking the joint and allowing the horse to rest the limbs. To flex the stifle again, the quadriceps femoris muscle contracts, lifting the medial patellar ligament free of the medial trochlear ridge allowing the patella to return to its working position. When something prevents the horse's ability to release the stifle, the condition is known as upward patellar fixation (also called "upward fixation of the patella" or "locked stifle").





Most cases of upward patellar fixation can be managed conservatively (exercise (physical therapy), improved body condition). In severe and unresponsive cases, surgery to cut the medial patellar ligament is an option. To see a video of upward patellar fixation, Click here

Stringhalt is involuntary flexion of the hindlimb and is usually bilateral. The problem in this case is rigid extension. Stringhalt is treated with lateral digital extensor tenectomy.

Gonitis is a term indicating stifle arthritis. It is nonspecific to the underlying cause and could be due to osteochondrosis, ligament injury, or some other problem. Upward patellar fixation and its consequences could be referred to as gonitis but this is a less specific diagnosis in this case.

Jack spavin is a lay term for cunean bursitis or irritation of the cunean tendon.

Thoroughpin is the term for effusion of the tarsal sheath (sheath of the deep digital flexor).

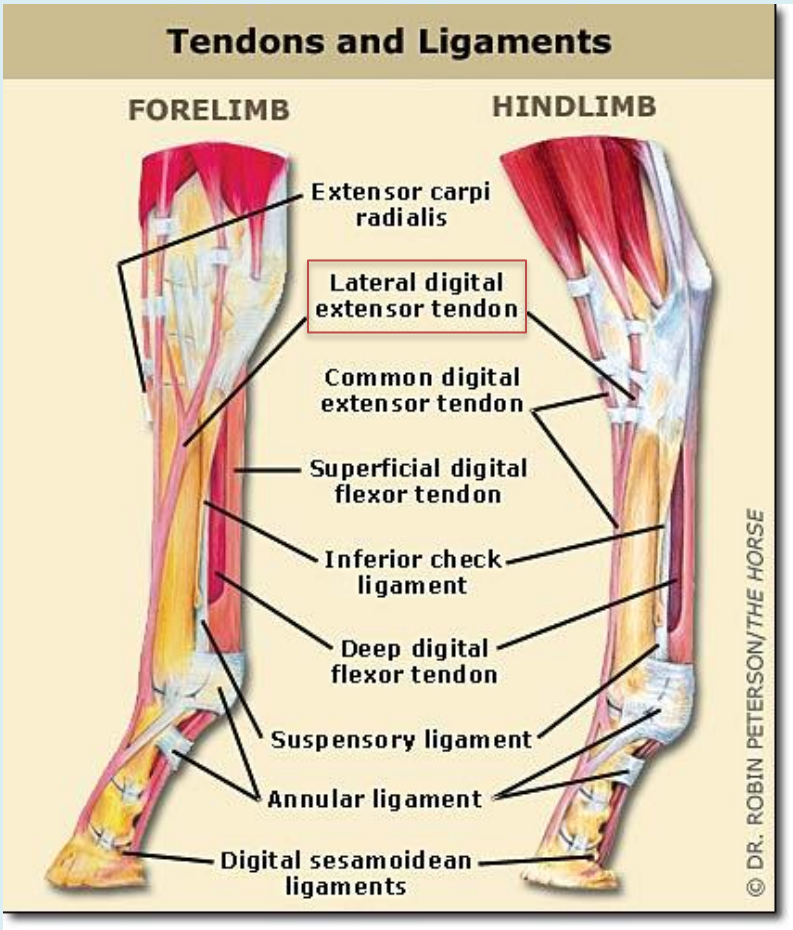
Question

A 5-year old horse presents to for a gait abnormality. You observe the horse walking and note that when the horse lifts the left hindlimb, it draws the foot up sharply until it touches its abdomen and then strikes it violently toward the ground. What condition should you suspect?

- Bog spavin
- Bone spavin

- Stringhalt
- Sweeney

Explanation - Stringhalt is a myoclonic disease affecting one or both pelvic limbs. It causes spasmodic hyperflexion of the leg. The etiology is unknown but **sweet pea poisoning** is thought to be associated with the condition. Diagnosis is based on clinical signs, but **electromyography** can be used to confirm the diagnosis. Treatment involves **tenectomy of the lateral digital extensor tendon**; however, not all cases respond to the treatment. To view a video of a horse with stringhalt, click here



Question

You examine a horse for lameness and find that the 8-year old gelding is lame on both forelimbs. The stride is short and choppy, and the horse is reluctant to move. There is an increased digital pulse in both forelimbs, and the horse is sensitive to tapping on the hoof wall. At rest he leans back and puts more weight on his rear limbs. The horse appears improved and moves much better following a nerve block of the foot using local anesthesia. You take radiographs (see image). What is the diagnosis?

- Fracture of the third phalanx
- Coffin joint sepsis
- Sole abscesses
- Navicular disease
- Laminitis with rotation of the third phalanx

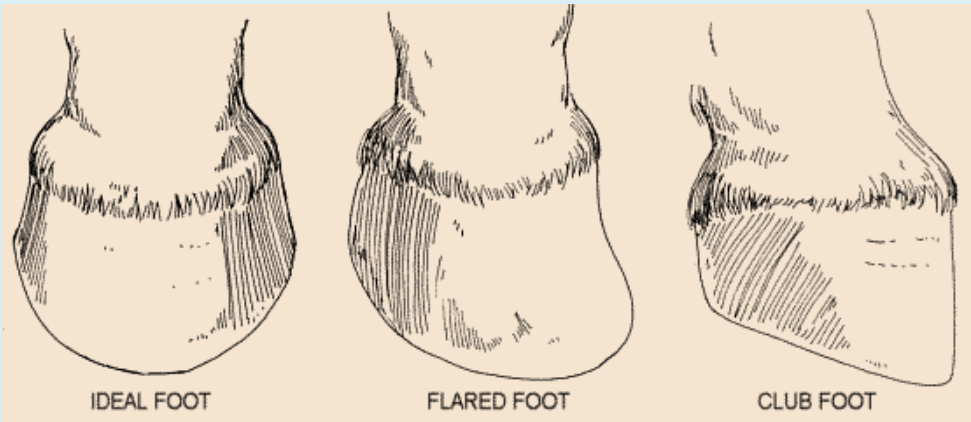
Explanation - Laminitis, or founder, is severe and has progressed to the point of rotation of the third phalanx. The angle of the hoof wall surface and the dorsal third phalanx are no longer parallel. These radiographic findings along with the clinical signs are diagnostic for laminitis.

Question

A club foot in a horse is a result of _____.

- Deep digital flexor tendon rupture
- Deep digital flexor tendon contracture
- Superficial digital tendon contracture
- Superficial digital tendon rupture

Explanation - The correct answer is **deep digital flexor tendon contracture**. There are multiple causes for flexural deformity of the distal interphalangeal joint (deep digital flexure contracture) including rapid bone growth, excessive feeding, faulty nutrition and lack of exercise. The distal check ligament controls the stretch in the long tendon of the deep digital flexor. If this becomes functionally too short, flexion of the interphalangeal joint occurs, resulting in a club foot. If medical therapy is not successful, surgical correction is recommended.



Question

It is a rainy April and you are visiting a horse farm to evaluate a horse with itchy and flaky skin lesions on the pastern and mild lameness. On examination, you see an exudative seborrheic dermatitis of the plantar aspect of the pastern that is slightly malodorous. Which of the following is a term used to describe this condition in horses?

- Scratches
- Ringbone
- Summer sores
- Sweet itch
- Sweeney

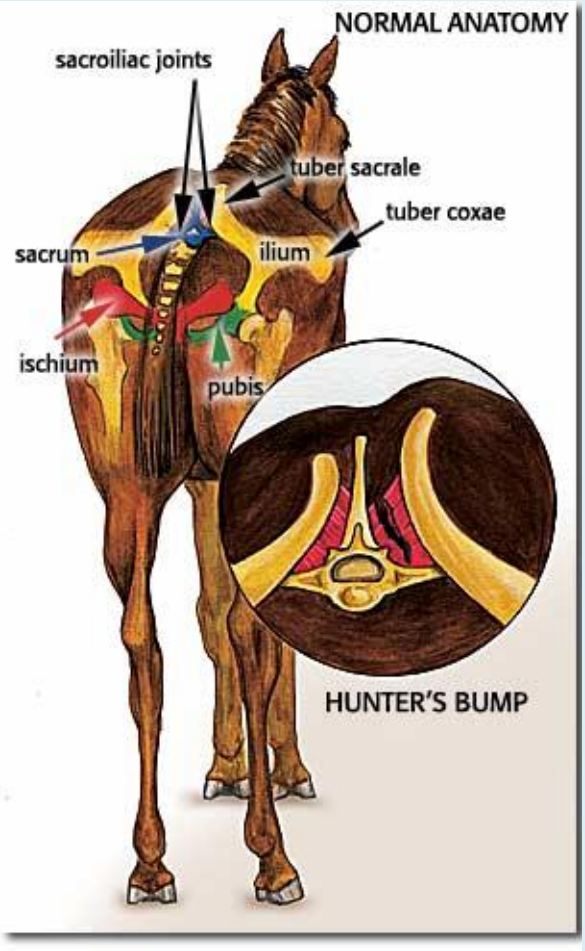
Explanation - Scratches is a condition of chronic seborrheic dermatitis of the palmar/plantar aspect of the pastern. The condition is sometimes referred to by several other names including "grease heel", "dermatitis verrucosa", "dew poisoning" and "mud fever". It is not specific to the underlying infectious cause but the condition is generally associated with horses kept in wet or muddy environments.

Question

A 3-year old steeplechaser horse presents to you for lameness. The owner reports that the horse developed a short-striding lameness of the left pelvic limb after an event and that the horse is reluctant to bear full weight on the left hind leg. On examination, you notice a prominent bump to the left of midline on the topline of the hindquarters (croup). What is the most likely diagnosis?

- Ruptured peroneus tertius
- Sacroiliac luxation
- Gonitis
- Upward fixation of the patella
- Stringhalt

Explanation - This case describes the common clinical findings in **sacroiliac luxation**/subluxation in horses. **Jumping horses** are commonly affected. The short strided gait is consistent with but not specific for this condition. The raised croup differentiates sacroiliac luxation from some other options in this case.



Question

You are examining a 2-year old pony with lameness that worsens after activity or work. The pony displays mild lameness on your exam and is sensitive to deep palpation of the third metacarpal bone of the left front limb. Radiographs reveal periostitis and new bone formation along the second metacarpal bone. No fracture is present. What term describes this condition?

- High ringbone
- Splints
- Osselets
- Sidebone

Explanation - Explanation - This is a description of **splints or metacarpal exostosis** which involves periostitis of the interosseous ligament between the third and second metacarpal (or metatarsal) bone. Treatment usually involves rest and anti-inflammatory medications, although if the bony exostoses impinge on the suspensory ligament, surgical removal of the proliferative tissue may be indicated.

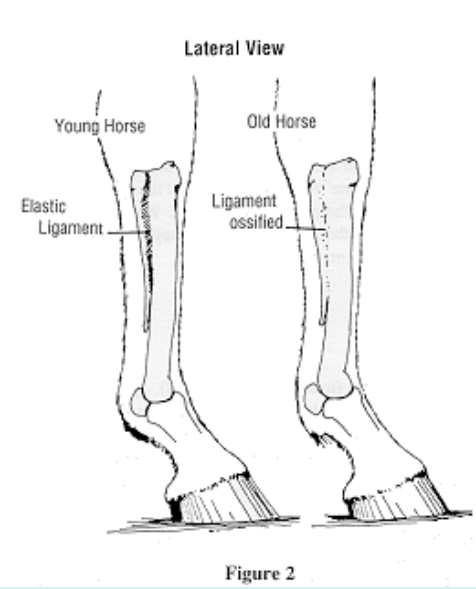
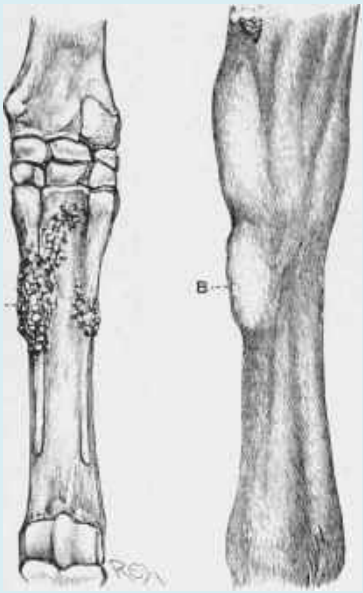
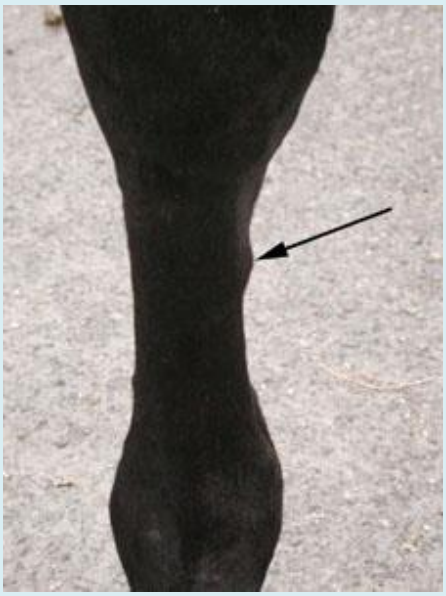


Figure 2





Question

A 17-year old Thoroughbred mare presents for chronic lameness. The owner reports that the mare has been off and on lame in the left foreleg for the past year or so. The farrier has been trying to correct a "bulge" on the hoof wall at the toe. Her hoof wall is very poor quality and crumbly. Today, she is 4/5 lame in the left forelimb. She is walking on her sole and the sole is convex. She has hoof tester sensitivity over the toe area. You perform radiographs of the foot which are shown. Which of the following treatments is considered useful for this chronic condition when refractory to conventional medical management?

Image courtesy of DVMInsight

- Arthrodesis of the joint
- Palmar digital neurectomy
- Surgical exploration and flushing of the joint
- Deep digital flexor tenotomy

Explanation - The case descriptions and radiographs are consistent with **chronic laminitis**. The dorsal hoof wall is much thicker distally due to P3 rotation. Gas tracks under the dorsal hoof wall are evident and there is a round lucent defect in the cranial medial aspect of the sole. There is P3 osteopenia and remodeling of the distal aspect of P3.

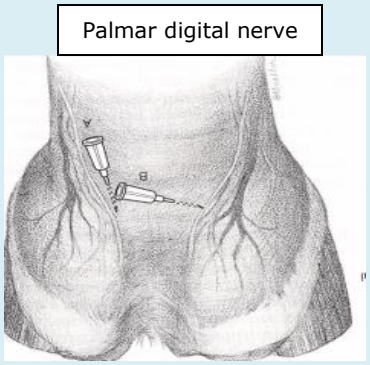
Although the optimal treatment for chronic laminitis remains controversial, the best answer is clearly deep digital flexor tenotomy. **Deep digital flexor tenotomy** is reported in several studies to be useful in the management of chronic laminitis, particularly when the distal phalanx is rotated or pedal bone penetration is present. Unfortunately, chronic laminitis is sometimes refractory to this therapy as well. Other reported options include dorsal hoof wall resection, curettage of regions of septic osteitis, and many types of corrective shoes. Again, all of these options may be ineffective.

The options of arthrodesis and surgical exploration of the joint are poor choices as this is not a joint disease. Palmar digital neurectomy is a procedure used to manage navicular disease and results in desensitization of the heel.

Question

You examine a 6-year old Quarter Horse gelding for a complaint of lameness. He has a short-strided stilted gait in the forelimbs, is more painful on a hard surface than on a soft grass surface, and head nods when led in a tight circle at the trot in either direction. The hoof tester elicits pain in the posterior third of the foot on both forefeet. The hoof appears normal except that it has narrow heels. A block of the palmar digital nerves seems to result in loss of hoof tester sensitivity and an improved gait. What condition is associated with these clinical findings?

- Sole abscess
- Navicular disease
- Osteochondrosis
- Chronic laminitis



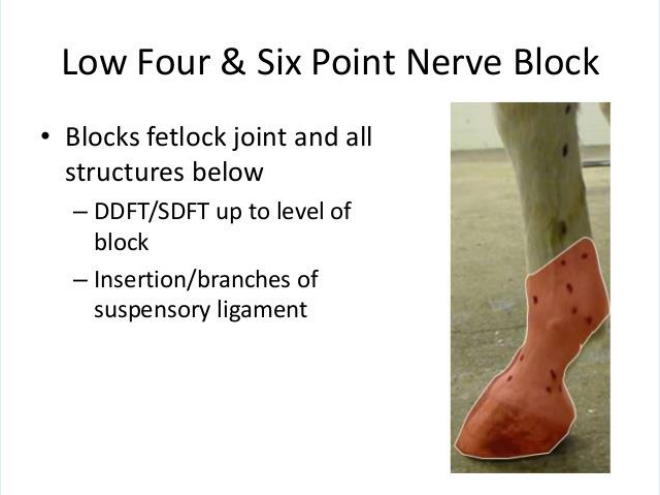
Explanation - Palmar foot pain can be the result of pain from any number of structures including the navicular bone, navicular suspensory or deep digital flexor tendon, navicular bursa, or several other heel areas. Navicular disease is a term used for pain associated with any of these structures.

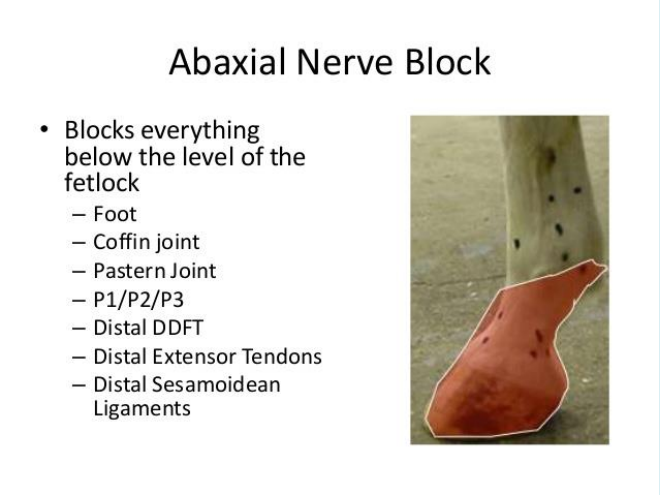
Question

You are examining a 3-year old Thoroughbred gelding for lameness of the right forelimb. The lameness persists with a palmar digital and abaxial sesamoidian nerve block but is improved by 90% after a low 4-point (low palmar) nerve block. The source of the lameness is likely in which region of the limb?

- Metacarpophalangeal joint
- Carpal-metacarpal joint
- Third phalanx
- Proximal suspensory ligament

Explanation - The low 4-point (low palmar) nerve block typically provides local anesthesia to the metacarpophalangeal (fetlock) joint and below. An injury to this area is most likely. The proximal suspensory ligament and carpal-metacarpal joint would require local anesthesia more proximally.





Question

Angular limb deformities such as marked carpus valgus in foals should be carefully evaluated and corrected. Which of the following treatments is the best primary means of correction because it promotes growth of the concave side and has little potential for overcorrection?

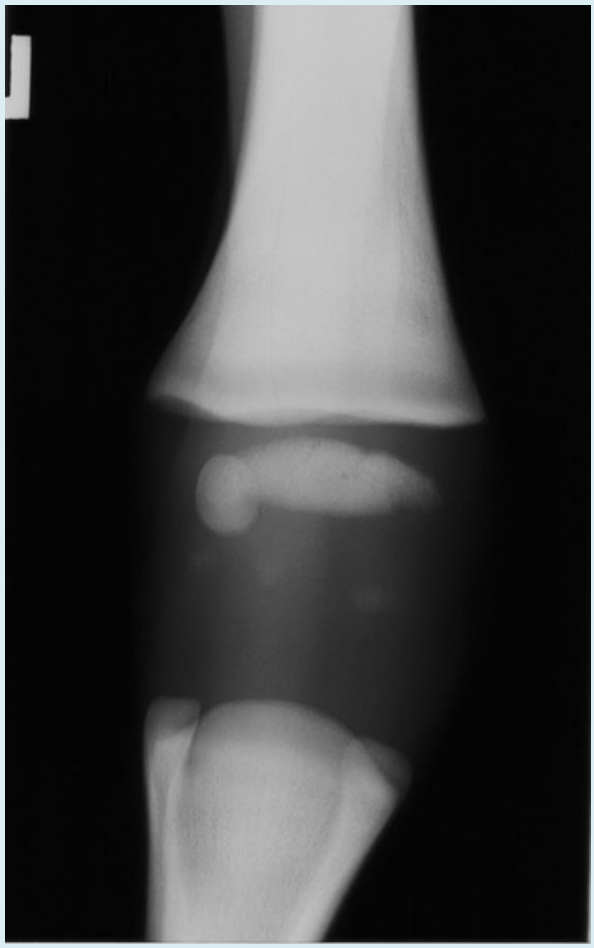
- Periosteal stripping over the concave side of the growth plate
- Injecting the convex side of the growth plate with long acting corticosteroids
- Hoof trimming
- Placing a full length leg cast on the affected legs for 6 weeks
- Placing a staple across the convex side of the growth plate

Explanation - The periosteum on the concave side is transected and elevated, which stimulates the growth plate in this area to accelerate growth. Correction is achieved in over 80% of foals within 6 weeks. The

disadvantages of the staple or screw and wire technique on the convex side are that they have the potential for infection and implant failure, and require a second surgery for removal. Overcorrection can also be a problem with those techniques.

Question

You are asked to evaluate some radiographs of the carpal bones of a newborn foal that may be premature. Upon examination of the radiographs what can you conclude (see picture)?



- The carpal bones are partially ossified, which is normal in a full-term healthy foal
- The carpal bones are incompletely ossified, suggesting that the foal is premature
- The carpal bones are fully ossified, suggesting a full-term healthy foal
- The carpal bones are lytic, suggesting septic arthritis in a newborn foal

Explanation - The carpal bones are incompletely ossified in this radiograph. Normal ossification of the cartilage precursors in the carpus occurs in the last part of gestation. Therefore, incomplete ossification suggests that this foal was born prematurely. The carpal bones will ossify as the foal ages, but they can

collapse with the weight of the foal placing pressure on the soft cartilage, which may result in misshapen carpal bones and chronic lameness.

Question

A pony owner has had several ponies develop acute and severe cases of laminitis this season. You evaluate the environment and attempt to determine the cause. Which of the following changes could you recommend to decrease the incidence of this problem?

- Supplement ponies with selenium
- Institute better arthropod control measures
- Prevent free access to lush grass pastures
- Increase grain in diet

Explanation - Acute laminitis is commonly associated with excess carbohydrate intake. Grazing of lush pastures is an especially common precipitating cause in ponies. Laminitis is not associated with selenium deficiency or arthropod problems.

Question

A 3-year old mare presents to your hospital for treatment of a hoof abscess. Which of the following drugs should never be given intravenously?

- Procaine penicillin
- Aminoglycosides
- Ceftiofur
- Sodium penicillin

Explanation - The correct answer is procaine penicillin. Remember to NEVER give procaine intravenously. An acute reaction will occur due to CNS procaine toxicity. Procaine is a local anesthetic and helps to give the procaine penicillin the long-acting effect, so it can be dosed twice daily. If injection is given intravenously, it causes severe trembling, thrusting backwards, and possibly collapse. If this does occur, treatment is supportive care, as long as the horse does not damage its neck or spine. Remember, there are intravenous preparations of penicillin such as potassium penicillin but procaine penicillin is always given IM. If you have never treated a large animal before, procaine penicillin is a white solution.

Question

You are examining a 4-year old horse with a distorted hoof in the right front foot. You watch the horse walk and note that the weight of the horse is not distributed uniformly with a focal area on the left side of the heel receiving most of the impact. Closer examination of the hoof reveals that the heel bulb on the left side of the

foot is 1 cm higher than the opposite heel when viewed from behind and the coronary band is displaced proximally on the left side. There is flare of the hoof wall on the right side. No hoof cracks or wall separation is present. Which of the following is the name for this condition?

- Scratches
- Sheared heels
- Gonitis
- Seedy Toe
- Club foot

Explanation - This is a description of **sheared heels** which is an asymmetry of the heels that is acquired due to imbalance of the foot resulting in one side of the heel contacting the ground before the other. This creates a shearing force and results in asymmetrical growth. Sheared heels are best treated with repeated corrective trimming of the hoof and application of supportive bar shoes. The prognosis is good when the condition is corrected before additional complications arise.

Question

You are visiting a horse farm to evaluate a horse with seborrheic lesions of the pastern and mild lameness. The owner notes that his horses have had problems with "Scratches" in the past. Which of the following management recommendations would be helpful in preventing this problem?

- Keep the horses away from the sun during the hottest hours of the day
- Keep the horses in a dry and clean environment
- Keep the horses on a regular deworming regimen
- Keep the horses in an insect-free environment

Explanation - Scratches is a condition of chronic seborrheic dermatitis of the palmar/plantar aspect of the pastern. The condition is sometimes referred to by several other names including "grease heel", "dermatitis verrucosa", "dew poisoning" and "mud fever". It is not specific to the underlying infectious cause but the

condition is generally associated with horses kept in wet or muddy environments.

Treatment involves removing the horse from the wet environment, clipping the surrounding hair, and gently washing and cleaning the area with a disinfectant followed by careful drying. Topical ointments or astringent dressings may sometimes be used. The best prevention is to keep horses in a dry and clean environment and maintain good hygiene practices.

Question

What is the treatment of choice for a carpal hygroma in a horse?

- Systemic antibiotics
- Surgical exploration and drain placement
- Local injection of corticosteroids
- Carpal arthrodesis
- Aspiration of fluid from the hygroma

Explanation - The correct answer is surgical exploration and drain placement. A hygroma is a fluid filled swelling at the carpus, usually seen from repeated trauma leading to local bursitis. Horses are usually not lame from this condition but have restricted range of motion of the joint. Simply aspirating the fluid and/or injecting corticosteroids is rarely effective and the swelling usually recurs. Surgical excision of the bursal lining may be indicated when recurrence is a problem.

Question

Treatment of choice for splints (intraosseous desmitis) includes which of the following?

- Antibiotics
- Arthrodesis
- Local steroid injection

- Rest and NSAIDs

Explanation - The correct answer is rest and NSAIDs. Splints or intraosseous desmitis is inflammation of the intraosseous ligament between the 3rd metacarpal (or metatarsal) bone with the small metacarpal (or metatarsal) bones. Periostitis occurs with new bone formation along the splint bones or small metacarpals (or metatarsals) usually due to repetitive concussion, excessive training, poor conformation, or improper shoeing. Radiographs are necessary to distinguish this condition from fractures of the splint bones.

Question

A 10-month old Arabian presents for persistent superficial and deep digital flexor tendon contracture. What surgical option does this patient have?

- Proximal check desmotomy only
- Distal check desmotomy and proximal check desmotomy
- Distal check desmotomy only
- Deep digital flexor tenotomy

Explanation - The correct answer is distal check desmotomy and proximal check desmotomy. The **distal** check desmotomy relieves the **deep** digital flexor contracture while proximal check desmotomy relieves superficial digital flexor contracture. If the contracture is severe, it may recur 2-4 months after surgery. At such time, a suspensory desmotomy is an option but subluxation at the proximal interphalangeal joint is a common consequence.

Question

You diagnose this 15-year old mare in the picture with a mild, acute laminitis. Which of the following can be used as treatment for this horse?

- Trimethoprim sulfa
- Application of horse shoes
- Prednisone
- Phenoxybenzamine

Explanation - The correct answer is phenoxybenzamine. Phenoxybenzamine is an alpha-adrenergic antagonist promoting vasodilation and restoration of blood flow to the digits. Prednisone is contraindicated in laminitis because corticosteroids are believed to induce the condition. Antibiotics are not indicated unless a secondary bacterial infection develops. Application of a horse shoe would not help and would be very painful in

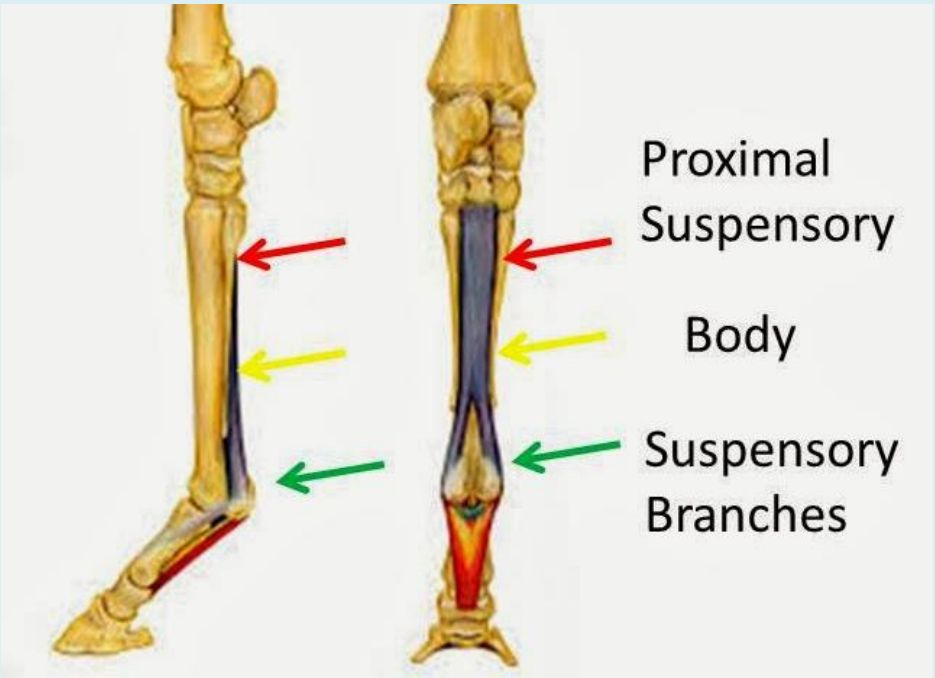
an already sensitive and painful condition. Other medications used to restore blood flow to the digits include acepromazine, isoxsuprine hydrochloride, dimethylsulfoxide (DMSO), heparin, and nitroglycerine.

Question

Which condition is associated with apical fracture of the proximal sesamoid bones, avulsion fractures of the palmar aspect of the third metacarpal bone, or fractures of the distal third of the small metacarpal bones in horses?

- Superficial digital flexor tendonitis
- Sweeney
- Deep digital flexor tendonitis
- Suspensory ligament desmitis

Explanation - The correct answer is suspensory ligament desmitis. The presence of these fractures would indicate ultrasonography as the next diagnostic test to evaluate for suspensory ligament desmitis, since these fractures are present with this condition 25% of the time.



Question

A 9-month old foal presents with difficulty walking. You immediately note that the foal appears to have a **flexural deformity** of the right forelimb consisting of an increased dorsal hoof wall angle of 80 degrees such that the heel does not contact the ground. The coronary band is prominent. You take radiographs which

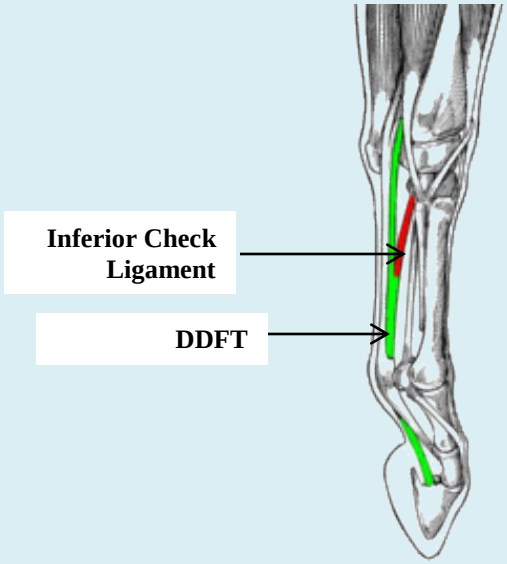
confirm a broken forward hoof-pastern angle. What is the most appropriate treatment for this type of flexural limb deformity?

- Superior check ligament desmotomy
- Lateral digital extensor tenectomy
- Desmotomy of the accessory ligament of the deep digital flexor tendon
- Transection of the insertion of the semitendinosus

Explanation - This case describes a severe flexural deformity of the distal interphalangeal joint, also known as "**clubfoot**". This is typically a congenital condition in young horses although it can be acquired. A genetic component is suspected. Mild cases can sometimes be managed conservatively with NSAIDs, farriery, exercise and nutritional changes. Severe cases often require surgery; the surgical procedure of choice is desmotomy of the accessory ligament of the deep digital flexor tendon (also known as inferior check ligament desmotomy). The accessory ligament of the deep digital flexor tendon (inferior check ligament) runs from the palmar surface of the proximal metacarpus to the deep flexor tendon in the mid-metacarpal region.

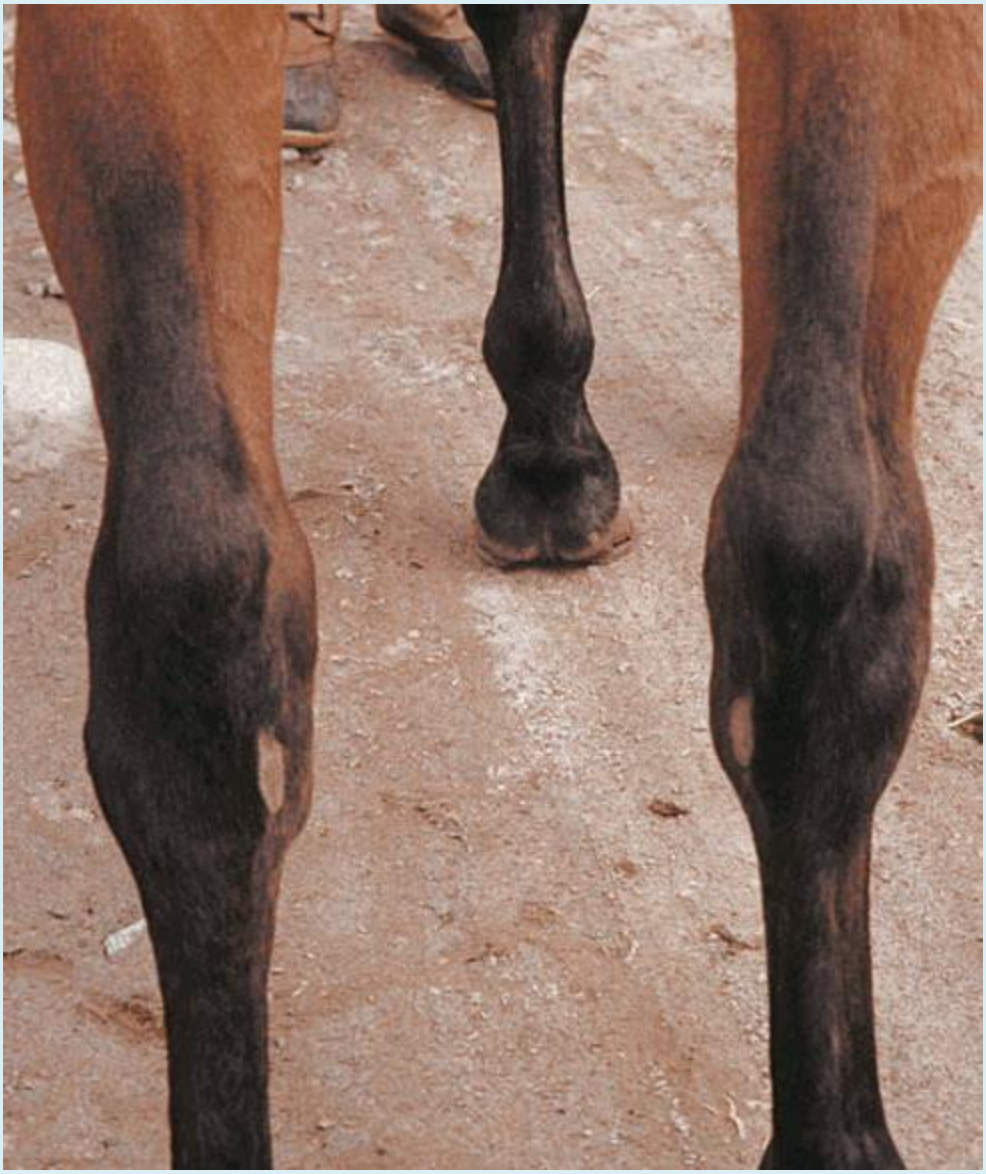
The superior check ligament originates above the knee and attaches to the superficial flexor tendon, and its primary purpose is to support the tendon. Superior check ligament surgery is used to treat a bowed tendon.

Lateral digital extensor tenectomy is a procedure used to treat stringhalt.
Transection of the insertion of the semitendinosus is used to treat fibrotic myopathy.



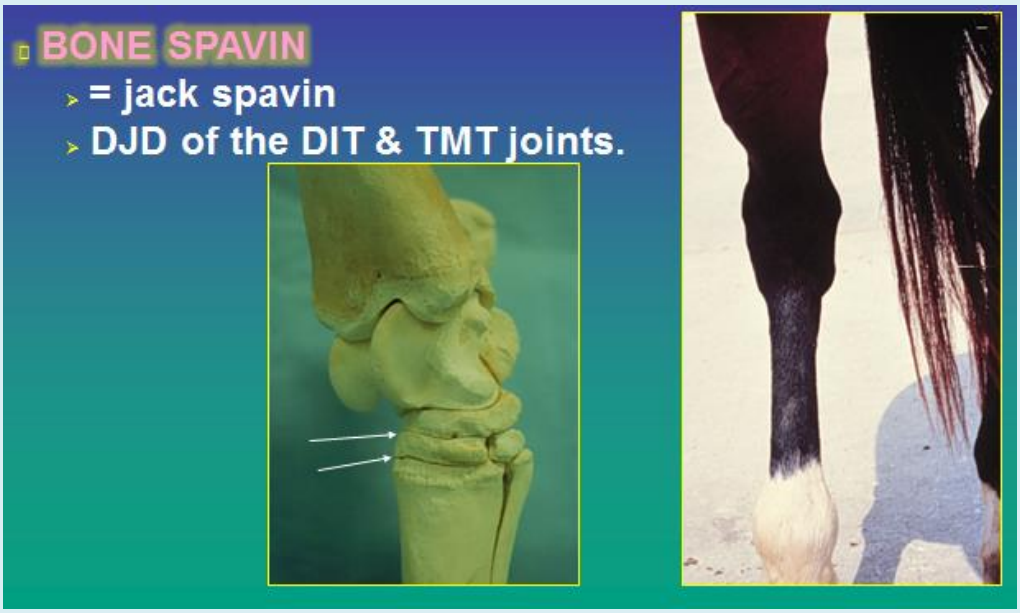
Question

A 5-year old brood mare presents with a history of intermittent hind limb lameness. The onset of the lameness has been gradual. The mare is an active cutting horse. With your initial hands-off examination, you compare the structural integrity of both hocks (see image). Without using any further diagnostics, what disease process and corresponding anatomical structures do you suspect is causing the lameness?



- Bog Spavin: osteoarthritis of the distal intertarsal joint and/or tarsometatarsal joint
- Bone Spavin: osteoarthritis of the distal intertarsal joint and/or tarsometatarsal joint
- Bog Spavin: synovial distention of the tarsocrural joint
- Bone Spavin: synovial distention of the tarsocrural joint

Explanation - The correct answer is bone spavin: osteoarthritis of the distal intertarsal joint and/or tarsometatarsal joint. Bog spavin is synovial distention of the tarsocrural joint, which you cannot see or appreciate with the given image. The only true answer with the information given is osteoarthritis of the distal tarsal and tarsometatarsal joint. All you have to do is memorize which spavin correlates with the appropriate anatomy. This question is designed to help you use the information given and not to get caught up in over analyzing the question.



Question

A week after a visit to the farrier, the horse becomes acutely lame. There is increased heat and pain in the right thoracic foot. There is edema and swelling over the pastern and fetlock. What is the most likely diagnosis?

- Navicular syndrome
- Subsolar abscess
- Laminitis
- Pedal osteitis

Explanation - The correct answer is subsolar abscess. Subsolar abscesses result from a puncture wound in the hoof from a penetrating foreign body or poor farrier work. Lameness is usually severe. Clinical signs may include pointing of the affected foot and increased heat and pain, which progresses to the coronary band. Edematous swelling of the pastern and fetlock may occur. In neglected cases, draining at the coronary band may occur in 2-3 weeks. Treatment consists of disinfectants and poultices. Ensuring adequate drainage is the mainstay of therapy. If a foreign body is present, it should be found and removed, and adequate drainage should be established.

Question

A 5-month old Thoroughbred filly is presented to you with enlargement of the right tarsocrural joint of 5 days duration. Upon examination, the filly has a very subtle lameness of the right hind limb and there is diffuse swelling of the joint. The filly appears otherwise alert and healthy. Sterile collection of synovial fluid from the affected joint reveals the following results:

Total Protein- 3.0 gm/dL
Total nucleated cell count- 760 cells/mcL
Cytology- 85% mononuclear cells, 15% neutrophils

After reviewing the synovial fluid analysis, you perform a series of radiographs on the tarsocrural joint (see image). What is the most likely diagnosis in this filly, based on the clinical signs, synovial fluid analysis, and radiographic findings?

- Physitis of the right distal tibial growth plate
- Osteochondritis Dissecans (OCD) of the lateral trochlear ridge of the right talus
- Lysis of the trochlear ridge of the right talus from chronic septic arthritis
- Mild collapse of the right central tarsal bone as a result of incomplete ossification of the tarsal bones

Explanation - The correct answer is OCD of the lateral trochlear ridge. Horses with OCD are typically presented for veterinary examination between the ages of **4 months to 2 years of age** with clinical signs of effusion and/or lameness. However, lameness is not always evident. Analysis of the synovial fluid can be normal or demonstrate evidence of mild inflammation.
Normal synovial fluid analysis values are: Total Protein < 2.5 gm/dL, Total Nucleated Cell Count < 500 cells/mcL, Cytology primarily (> 90%) mononuclear cells.

In regard to the other possible answers, incomplete ossification of the tarsal bones can occur and result in crushing of the small tarsal bones; however, radiographs in this case do not support this finding. As well, septic arthritis can cause lysis of bone, but the patient is typically very lame and has evidence of severe inflammation within the joint (i.e. > 20,000 cells/mcL in synovial fluid).

Question

Sesamoiditis is usually caused by which of the following in horses?

- Septicemia
- Extension of tendonitis
- Penetrating wounds
- Tearing of the ligamentous attachments to the sesamoids
- Chronic sesamoid fractures

Explanation - The correct answer is tearing of the ligamentous attachments.
During strenuous exercise, the insertion of ligaments on sesamoid bones can tear, leading to sesamoiditis.
Clinical signs can be similar but are generally less severe than sesamoid fractures (lameness, inflammation).
Radiographic findings in sesamoiditis can include new bone formation or osteolytic lesions and radiolucent lines which are prominent vascular channels.
Treatment involves long term rest and NSAIDs.
Prognosis is guarded to poor.

Prominent vascular channels

Question

A 3-year old Thoroughbred race horse presents for lameness evaluation. The trainer reports that the lameness has been slowly progressive over the past 6 weeks. You observe the horse walk and see a short, choppy gait in the front legs. There is swelling over the front of both fetlock joints and palpation and flexion of the fetlocks elicits pain. Which of the following is the most likely diagnosis?

- High ringbone
- Low ringbone
- Sidebones
- Osselets

Explanation - Osselets are inflammation of the periosteum on the dorsal distal epiphyseal surface of the third metacarpal bone and fetlock joint. As in this case, they are often (but not always) bilateral. Osselets typically begin from chronic stress injury to the front fetlock(s) from repeated concussive forces during racing and hard training. Horses with long or upright pasterns may be predisposed. The major clinical signs are increasing lameness and a short choppy gait. Thickening and soreness of the fetlock are also frequently seen. Early diagnosis and intervention is important because once the condition progresses to osteoarthritis, the prognosis is much worse. If recognized early and treated with rest, anti-inflammatory medications, and intra-articular sodium hyaluronate injections, many horses can recover completely.

None of the other choices listed are associated with the fetlock. Low ringbone is osteoarthritis of the distal interphalangeal (coffin) joint. High ringbone is osteoarthritis of the proximal interphalangeal (pastern) joint. Sidebones are ossification of the collateral (alar) cartilages of P3.

Question

Which of the following is not considered a predisposing factor to a horse developing laminitis?

- High carbohydrate diet
- Endometritis
- Excessive weight bearing on a single limb
- Application of horse shoes
- Acute systemic disease

Explanation - The correct answer is application of horse shoes. Laminitis is an inflammatory condition of the lamina in one or more feet of a horse. It is often a manifestation of systemic disturbances such as endometritis and salmonellosis. A high carbohydrate diet (carbohydrate overload), excessive weight bearing

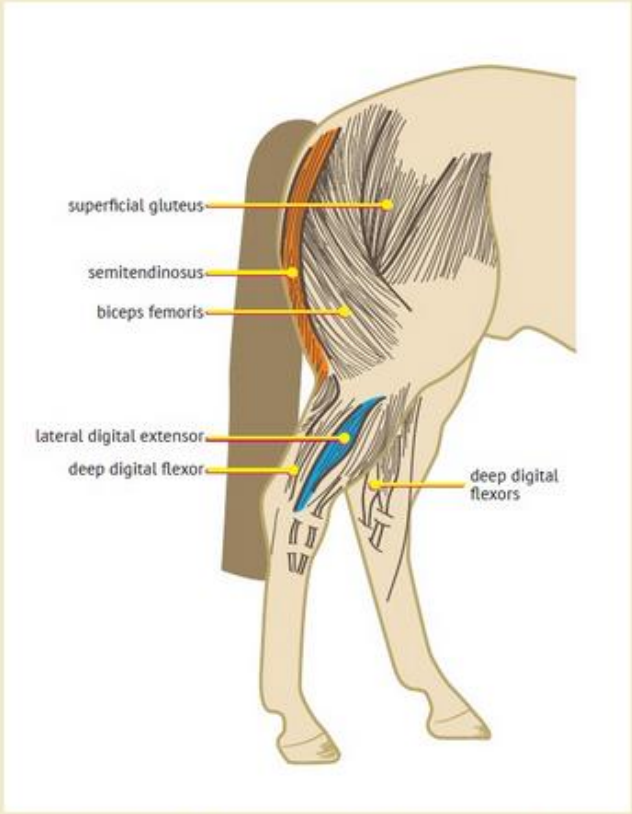
on an individual leg, and corticosteroid administration also predispose a horse to laminitis. Application of horse shoes has no association with development of laminitis.

Question

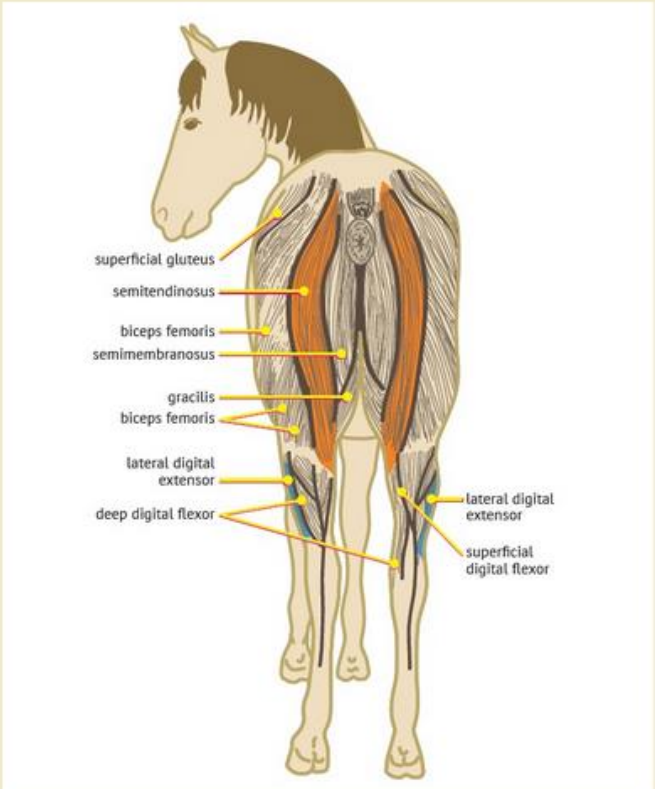
Treatment of stringhalt in a horse involves which of the following?

- Palmar digital neurectomy
- Tenectomy of the lateral digital extensor
- Splinting the leg in extension
- Suspensory ligament desmotomy

Explanation - The correct answer is tenectomy of the lateral digital extensor. Stringhalt is a myoclonic disease affecting one or both pelvic limbs. It causes spasmodic hyperflexion of the leg. The etiology is unknown but **sweet pea poisoning** is thought to be associated with the condition. Diagnosis is based on clinical signs, but electromyography can be used to confirm the diagnosis. Treatment involves tenectomy of the lateral digital extensor; however, not all cases respond to the treatment.



One form of stringhalt is associated with damage to the lateral digital extensor muscle.



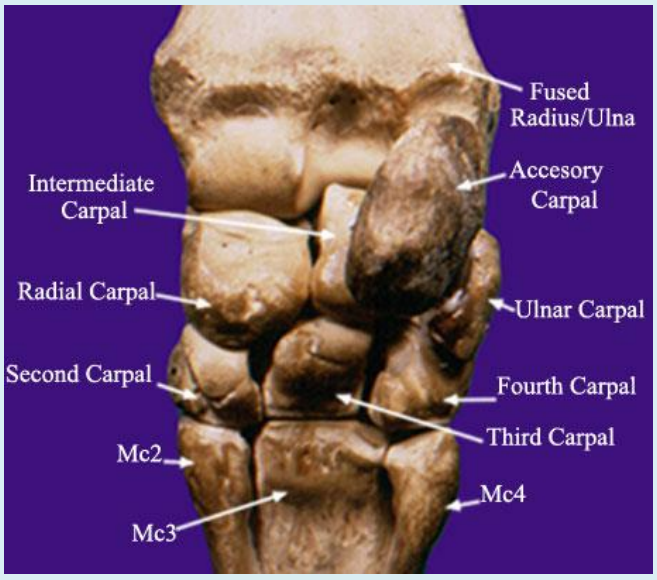
Fibrotic myopathy is the result of scar tissue formation within the semitendinosus muscle.

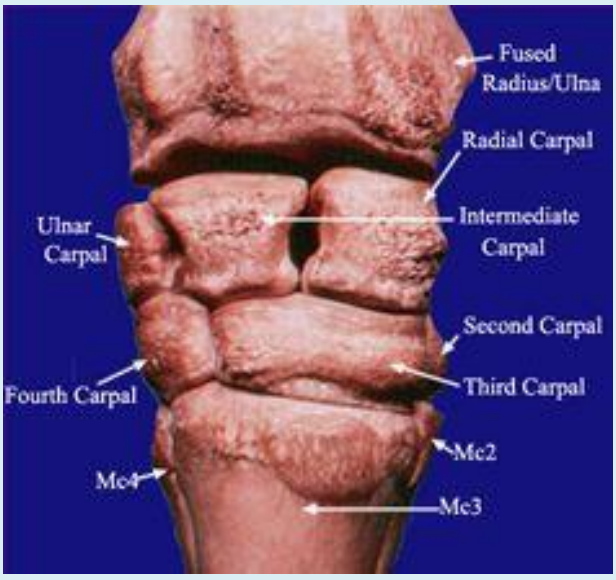
Question

Carpal fractures in horses occur most commonly in which carpal bones?

- Accessory, 2nd and 3rd carpal bones
- Radial and 3rd carpal bones
- 3rd and 4th carpal bones
- Ulnar and accessory carpal bones

Explanation - The correct answer is **radial and 3rd carpal bones**. Most carpal fractures in horses occur at the dorsal aspect of the carpal joint, particularly at the radial and 3rd carpal bones. Both chip and slab fractures may occur. These fractures usually result in immediate swelling and severe lameness. Diagnosis is based on radiographs and arthroscopic surgical repair is frequently the treatment of choice.





Question

You are evaluating a 9-year old Standardbred stallion with a chronic foot condition of the left hind leg. The horse has pain and swelling along the coronary band and is barely toe touching in the left hind leg. You note that there is a marked change to the shape of the hoof. Which of the following conditions, caused by excessive strain on the common digital extensor tendon where it attaches to the front of the coffin bone, is the most likely diagnosis?

- Keratoma
- Quittor
- Club foot
- Buttress foot

Explanation - **Buttress foot**, also known as **pyramidal disease** or extensor process disease, arises secondary to excessive strain on the extensor process of P3 resulting in **periostitis** in the region of the pyramidal process. There is often associated **fracture** of the process. As the disease progresses, lameness worsens and skin of the coronet becomes thickened and indurated. In addition, the wall of the hoof protrudes at the toe.

Club foot is a condition seen in horses secondary to contracture of the distal interphalangeal joint leading to steep hoof wall and shortened toe. Quittor is an infection of the alar cartilage of P3. A keratoma is a mass of the inner wall of the hoof.

Question

A 12-year old Appaloosa stallion presents to you for a gait abnormality. The owner reports that the horse has an intermittent hind limb lameness which sometimes eases off after exercise. On your examination, you note bony swelling on the hock of both hind limbs, worse on the left side. You suspect that the horse has bone spavin. Which of the following abnormal gaits would you expect to see with this condition?

- Minimal weight bearing and marked foot sensitivity
- Short, low arc stride, landing toe first
- Hindleg in rigid extension, pulling forward dragging the toe
- Leaning forward stance

Explanation - Bone spavin is osteoarthritis of the distal intertarsal joint and/or the tarsometatarsal joint. Horses with bone spavin tend to have a shortened forward flight of the hoof (low arc stride) with decreased hock action and they tend to drag the toe.

A gait with the hindleg in rigid extension, pulling forward dragging the toe is seen with upward fixation of the patella

Minimal weight bearing and marked foot sensitivity is seen with conditions of the feet such as subsolar

abscesses and septic navicular bursitis (also known as "street nail")

A leaning forward stance is seen with navicular disease. Horses with navicular disease also tend to have short strides and place the toe first.

Question

A 16-year old Quarter Horse mare presents to you for a stiff gait. The owner reports that the horse has an intermittent hind limb lameness which sometimes eases off after exercise. It seems to be getting worse over the past few months. On your examination, you note bony swelling on the hock of both hind limbs, worse on the left side. You examine the horse's gait and note that the left hind limb usually lands toe-first and has a shorter, lower arc than the right leg, with the toe appearing to drag. You perform a flexion test by holding the hock in forced flexion for 60 seconds and then immediately trot the horse and note that the lameness is substantially worsened. You inject 4 mls of mepivacaine into the distal intertarsal joint, which significantly lessens the lameness. Radiographs of the hock show narrowing of the joint space, and bone spurs, and bony bridging of the third tarsal bone and third metatarsal bone. Which of the following procedures is most likely to benefit the horse?

- Arthrodesis of the joint
- Lateral digital extensor tenectomy
- Transection of the insertion of the semitendinosus
- Arthroscopy and removal of bony fragments

Explanation - This is a case description of bone spavin, which is osteoarthritis of the distal intertarsal joint and/or the tarsometatarsal joint. The description of the bony swelling and gait are consistent with this condition. The positive flexion test (sometimes called spavin test) as well as improvement with intra-articular anesthesia and the radiographic findings confirm the clinical suspicion.

Bone spavin can be managed with a variety of measures including NSAIDs, injections of corticosteroids or hyaluronic acid into the joint and corrective shoeing to assist in breakover and/or with heel support. Ultimately though, the disease tends to be chronically progressive until joint arthrodesis or ankylosis occurs. The process may occur spontaneously or can be accelerated by surgery including procedures to disrupt the joint cartilage and fill with bone grafts or chemical arthrodesis.

Lateral digital extensor tenectomy is a procedure used to treat stringhalt. Transection of the insertion of the semitendinosus is used to treat fibrotic myopathy.

Question

A 2-year old Thoroughbred race horse presents for lameness evaluation. The trainer reports that the lameness has been slowly progressive over the past 3 weeks. You observe the horse walk and see a short, choppy gait in the front legs. There is swelling over the front of both fetlock joints and palpation and flexion of the fetlocks

elicits pain. Radiographs show no evidence of new bone formation in the fetlock. You diagnose the horse with osselets (periostitis of the distal dorsal cannon bone). What is the best treatment recommendation?

- Deep digital flexor tenotomy
- Arthrodesis of the fetlock
- Rest, phenylbutazone, and intra-articular injections of sodium hyaluronate
- Palmar digital neurectomy

Explanation - Cases of osselets that are caught before the development of osteoarthritis often respond completely to medical management consisting of rest, anti-inflammatories (such as phenylbutazone) and intra-articular injections of sodium hyaluronate or polysulfated glycosaminoglycans (Adequan).

Fetlock arthrodesis is reserved for more advanced fetlock injuries. Deep digital flexor tenotomy is used to treat certain cases of chronic laminitis. Palmar digital neurectomy is used to treat navicular disease and results in desensitization of the heel.

Question

In a horse, chronic synovitis of the tibiotarsal joint with distension of the joint capsule is which of the following?

- Curb
- Sweeney
- Bone spavin
- Bog spavin

Explanation - The correct answer is bog spavin. Bog spavin, also known as tarsal hydrarthrosis, is often due to poor conformation and can result in increased synovial fluid formation. Both hindlimbs are usually affected. The horse is usually not lame from this condition. Distension may spontaneously appear and disappear in young horses. Bone spavin is osteoarthritis of the hock. Curb is thickening of the plantar tarsal ligament due to strain. Sweeney is supraspinatous contracture.

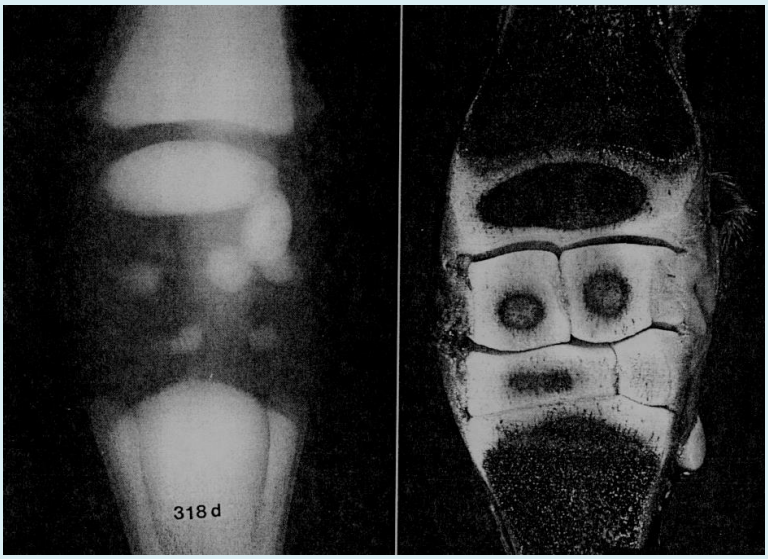
Question

A premature foal presents for examination. Physical examination is unremarkable, but the owner wishes to rule out an angular limb deformity prior to selling the foal. What diagnostic test would provide the most information about whether the foal will develop an angular limb deformity?

- Carpal and tarsal radiographs
- Ultrasound of the flexor tendons
- Full body bone scan

- Radiographs of the long bones of the limbs

Explanation - The correct answer is carpal and tarsal radiographs. In a young foal that was born prematurely, palpation alone is insufficient to detect angular limb deformities. The carpus and tarsus are the common sites for such deformity to occur, and radiographs will provide the best information about the bony conformation (ex: Insufficient ossification of small bones in carpus and tarsus).



Bones only mineralized in center - Rounded appearance

Question

This 5 year old Standardbred mare in the picture presents for lameness in the right hind limb. There is a jerking motion as she moves the leg forward. On physical exam, you are able to extend the hock and flex the stifle simultaneously. What is your diagnosis?

- Gastrocnemius rupture
- Peroneus tertius rupture
- Achilles tendon rupture
- Stringhalt

Explanation - The correct answer is peroneus tertius rupture. Damage to the peroneus tertius muscle disrupts the stay apparatus of the hind limb. The characteristic diagnostic feature is the ability to extend the hock and flex the stifle simultaneously because an intact peroneus tertius prevents this.

Question

A 3-year old gelding is presented for lameness. Physical exam reveals moist, exudative dermatitis of the central and lateral sulci of the frog of his feet and a thick black discharge with a malodorous smell. Which of the following is an appropriate way to treat the disease?

- Administer systemic antibiotics, corticosteroids, and educate the client on proper hygiene
- Administer systemic antibiotics and advise the owner about proper hygiene for the horse
- Trim away necrotic hoof material, apply antiseptic products, apply a bandage, and educate the client on proper hygiene
- Advise the owner to clean up the horse's environment and educate about proper hygiene
- Trim away the necrotic tissue and administer systemic antibiotics

Explanation - The correct answer is to trim away necrotic hoof material, apply antiseptic products, apply a bandage, and educate the client on proper hygiene. The horse has **thrush**, a condition often caused by fusobacterium necrophorum in horses. The condition is usually caused by unsanitary conditions, poor foot care, and lack of exercise. Systemic antibiotics and corticosteroids are usually unnecessary.

Question

Which of the following fractures in an adult horse has a grave prognosis for return to function?

- Tibia
- P3 (distal phalanx)
- P1 (proximal phalanx)
- Ulna

Explanation - The correct answer is tibia. Fractures of the tibia are usually non-reconstructable comminuted fractures. Due to the lack of soft tissue coverage, these fractures are highly susceptible to infection, which makes them poor candidates for recovery. As long as the articular surface of P3 is not involved, P3 fractures carry a good prognosis. Most P1 fractures are fairly easily repaired with lag screws as long as they are not comminuted. Ulnar fractures are usually treated with bone plates and have a good prognosis, with about 70% of horses returning to function.

Question

What is the underlying pathophysiology of osteochondrosis in horses?

- A defect in the rate of bone growth
- A defect in the production of aggrecans and glycosaminoglycans
- A defect in cartilage production
- A defect in the synovial lining
- A defect in endochondral ossification

Explanation - The correct answer is a defect in endochondral ossification. Osteochondrosis develops when there is abnormal endochondral ossification resulting in the production of a cartilaginous flap within a joint. In young horses, a diagnosis is frequently made when first training. Severity of lameness can vary greatly. Osteomyelitis, trauma, and septic arthritis may be good differentials.

Question

A 4-year old Standardbred stallion presents to you in the afternoon with a recent onset of lameness. The owner reports that in the early morning, feed was delivered and the horse apparently got into a bag of grain. On exam, you note heat over the hoof wall and coronary band in the front feet and a very strong digital pulse. The horse is tremoring and sweating. A hoof tester reveals pain over the sole at the toe and the horse is sensitive to tapping on the hoof wall. What treatment is most appropriate?

- Induce vomiting with xylazine and then administer activated charcoal by stomach tube
- Administer intravenous fluids, penicillin, and gentamycin
- Administer 1 gallon of saline by stomach tube and give an injection of dexamethasone

- Administer neomycin and lactulose by stomach tube and cold pack the feet
- Administer 1 gallon of mineral oil by stomach tube and start the horse on intravenous fluids and flunixin meglumine

Explanation - The clinical presentation is consistent with a case of acute laminitis secondary to grain overload. Acute laminitis is frequently associated with excessive ingestion of carbohydrates, grazing of lush pastures, and/or excessive exercise.

Acute laminitis more commonly affects the front feet but can affect all four. Local heat and pain are usually detected as well as bounding digital pulses. Pain may also manifest as tachycardia, muscle tremors, or sweating.

The goals of treatment are to prevent further development of laminitis, reduce pain, and reduce other complications from laminitis. Acute laminitis is considered a medical emergency and treatment should be initiated as soon as possible. When a horse is suspected of grain overload, administration of mineral oil by stomach tube acts as a laxative and decreases absorption of toxic material from the gastrointestinal tract. Other recommended treatments include intravenous fluids, parenteral antimicrobials, anti-inflammatory drugs (such as flunixin meglumine or phenylbutazone), and hyperimmune serum or plasma. It is also recommended to place the horse in a stall with soft flooring. Other treatment considerations include heparin, phenoxybenzamine, and heart-bar shoeing. There are some practitioners who recommend cold packs but there is conflicting evidence that hot packs may be more beneficial. Corticosteroids are contraindicated.

Question

Which nerve block would be most specific for alleviating pain associated with laminitis?

- High 4 point block
- Abaxial sesamoid block
- Palmar digital block
- Suspensory ligament block

Explanation - The correct answer is the abaxial sesamoid block. The four basic blocks used by equine clinicians are the palmar digital, abaxial sesamoid, low four point and high four point block, each desensitizing more of the limb as your blocks move more proximal on the limb.

The palmar digital desensitizes the palmar third of the foot whereas **the abaxial sesamoid** desensitizes the entire foot. As laminitis is associated with separation of the dorsal lamina, the abaxial sesmoid block would be most likely help with laminitis. Of note, desensitizing the foot during acute laminitis is not typically employed as a standard treatment but is rather used to help alleviate pain so that the clinician can perform radiographs of the feet or trim the feet. **The low 4 point block** desensitizes the palmar aspect distal to the distal end of

the second and fourth metacarpals. **The high 4 point block** desensitizes the leg distal to the carpus or tarsus. The suspensory ligament block desensitizes the deep branch of the lateral palmar nerve at the level of the carpometacarpal joint.

Question

Which of the following would not be seen on a navicular bone radiograph in a horse with navicular syndrome?

- Osteophyte formation
- Osteolysis
- Bone remodeling
- Enlarged vascular channels

Explanation - The correct answer is osteolysis. Navicular syndrome is a chronic degenerative condition of the navicular bursa and navicular bone. The precise etiology is unknown and is likely multifactorial involving the navicular bone, the suspensory ligament, the coffin joint, the navicular bursa, and the deep digital flexor tendon. **Osteophyte formation**, **bony remodeling**, and **enlarged vascular channels** are the hallmark radiographic findings in horses with navicular syndrome. Osteolysis is generally not a component of this condition.

Question

A 2-year old pony presents to you with bilateral swelling of the tibiotarsal joints. The owner noticed the swelling two weeks ago and reports that the pony has not been lame. You evaluate the horse and do not detect lameness or conformation abnormalities but there is significant distension of the tibiotarsal joint capsules bilaterally on the dorsal medial surface of the hock. When you apply firm pressure, the swelling compresses and distends on the other side of the joint. What is the most appropriate treatment for the condition that is likely affecting this horse?

- Deep digital flexor tenotomy
- Surgical exploration and flushing of the joint
- Drainage under local anesthetic today and whenever the fluid returns
- Corrective shoeing
- No treatment is necessary

Explanation - This case describes the typical presentation and findings of a horse with bog spavin which refers to swelling of the tibiotarsal joints. Although this has the potential to be associated with lameness and or poor conformation, there is often no other clinical abnormality detected. **No treatment is generally needed for cases without other clinical complications**. Some practitioners recommend draining the fluid but the swelling typically recurs and repeated drainage is not recommended. Corrective shoeing is not an

option as there is **no conformational abnormality**. Deep digital flexor tenotomy is a treatment sometimes used for horses with laminitis to limit rotation of P3.

Question

A 15-year old Quarter Horse gelding is presented for a chronic history of right forelimb lameness. Upon examination of the radiograph (see image), what is the most distal diagnostic nerve block necessary to desensitize the source of lameness?

- Palmar Digital Nerve Block
- Subcarpal Nerve Block (high four point)
- Abaxial Sesamoid Nerve Block
- Palmar Metacarpal Nerve Block (low four point)

Explanation - First, you must determine that there is osteoarthritis of the pastern joint (proximal interphalangeal joint). Observe the periosteal bone proliferation and sclerosis along the medial side of the joint along with collapse of the medial joint space.

Next, it is important to know what locations are blocked by the various perineural injections. You are likely to see at least one question on the board exam in regard to nerve blocks.

The palmar digital nerve block typically blocks the palmar part of the foot; the abaxial block desensitizes the

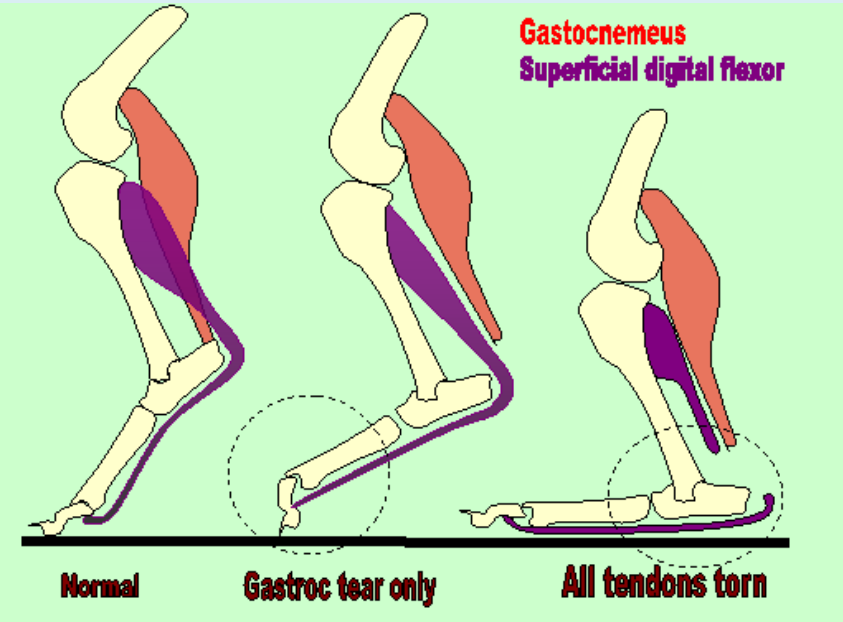
foot and proximal interphalangeal (pastern) joint; the low four point block desensitizes the foot, pastern and fetlock joint; and the subcarpal block desensitizes the metacarpal region and below. Thus, the lowest block that would likely desensitize the area in question is the abaxial sesamoid block.

Question

A horse presents to you with a laceration across the caudal aspect of the hock; the horse is not weight-bearing, and the hock completely dropped to the ground. What structure has likely been ruptured to cause these clinical signs?

- Suspensory ligament
- Proximal check ligament
- Superficial digital flexor
- Achilles tendon
- Gastrocnemius

Explanation - The correct answer is **Achilles tendon**. A complete laceration of the Achilles tendon involves rupture of the gastrocnemius and superficial flexor tendons. A gastrocnemius rupture alone may cause a dropped hock, but horses with this injury will still bear weight on the affected limb. Prognosis for this injury is grave.



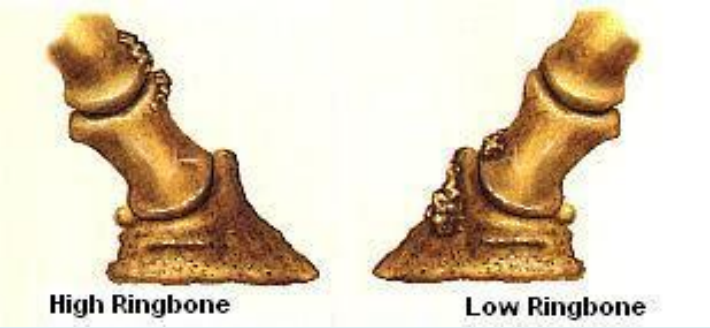
Question

Severe ringbone in a horse is best treated with which of the following?

- Non-steroidal anti-inflammatory drugs

- Surgical arthrodesis of the pastern joint
- Oral corticosteroids
- Cold packing the distal limb
- Radiation therapy

Explanation - The correct answer is **surgical arthrodesis** of the pastern joint. Ringbone is osteoarthritis of the phalanges. It can be caused by poor conformation, improper shoeing, and trauma such as wire cuts or repetitive concussion on hard surfaces. Diagnosis can be made on palpation of soft tissue thickness and new bone formation in the pastern region as well as by radiography. Range of motion of the involved joints is decreased and regional nerve blocks can help localize the problem area. **Complete rest** is the most important requirement for treatment. **Cold packing, astringent applications, and radiation therapy** can be useful early on in the disease, and **anti-inflammatories** can help relieve pain. **Surgical arthrodesis** of the pastern joint is curative and can restore a young horse back to performance status.



Question

You are examining a 12-year old Thoroughbred horse for a foot problem. During your examination of the foot, you note a hollow sound over the hoof wall when you tap it near the toe. You probe and find a cavity between the hoof wall and the underlying lamina along the white line. The hoof wall quality is poor and crumbling. Further examination of the foot and radiographs show no evidence of laminitis. What is the common name for this condition?

- Thoroughpin
- Seedy Toe
- Sheared heels
- Bog spavin

Explanation - The condition described is consistent with "**seedy toe**" which is also sometimes referred to as "hollow wall" or "**White line disease**". Seedy toe is characterized by a change in the character of the horn such that the inner surface is crumbly and there may be a cavity due to loss of substance. Lameness may be present if there is abscessation or concurrent laminitis. To treat seedy toe, any necrotic or infected horn

should be removed to establish drainage. The area should be cleaned and antiseptics may be applied to cleaned, raw tissues. Appropriate supportive shoeing may be necessary until the hoof regrows. The prognosis is generally good if the condition is diagnosed and treated early and no laminitis or deeper tissue involvement is present.

Question

Radiographic abnormalities associated with chronic laminitis in horses include which of the following?

- A distinct lucent line between P3 and the hoof wall on the lateral projection
- Osteophyte formation along the solar margin
- A change in the angulation of P3
- Osteophyte formation between P2 and P3

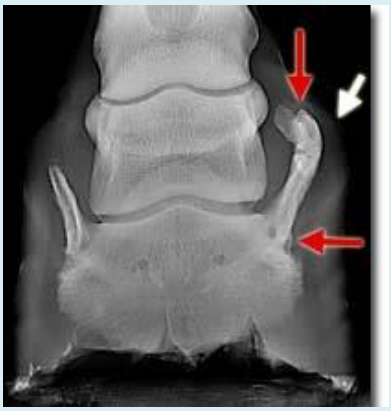
Explanation - The correct answer is a change in the angulation of P3. Inflammation and degeneration of the lamina can be seen radiographically as rotation of P3 relative to the hoof. Osteophyte formation is not an indication of laminitis. A distinct lucent line is normally seen between the margin of P3 and the hoof on the lateral view of a foot.

Question

You are examining a 3-year old working draft horse on a prepurchase exam. The horse does not show signs of lameness but you note decreased flexibility on palpation of the collateral cartilages of P3 on the right front foot. You take radiographs which show ossification of the collateral cartilages of P3. What should you tell the prospective purchaser?

- This is splints and in the absence of other signs, it should not affect his decision to purchase the horse
- This is low ringbone and he should be aware that horses with this condition are at increased risk of developing lameness
- This is sidebone and in the absence of other signs, it should not affect his decision to purchase the horse
- This is splints and he should be aware that horses with this condition are at increased risk of developing lameness

Explanation - Ossification of the alar cartilage of the coffin bone is known as "**sidebone**" in horses. Sidebone can be associated with lameness but many horses with sidebone are not lame and horses with sidebone are not thought to be predisposed to developing lameness as a result. Therefore, it is generally believed that in the absence of lameness or local sensitivity, sidebone should not affect the purchaser's opinion of a horse's soundness. Low ringbone refers to osteoarthritis of the distal interphalangeal (coffin) joint. Splints or interosseous desmitis is inflammation of the interosseous ligament between the 3rd metacarpal (or metatarsal) bone with the small metacarpal (or metatarsal) bones.



Question

A 4-year old hunting horse presents to you for lameness. The owner reports that the horse developed a short-striding lameness of the left hind limb after an event this week and that the horse is reluctant to bear full weight on the left hind leg. On examination, you notice a prominent bump to the left of midline on the topline of the hindquarters (croup). You suspect a sacroiliac luxation or subluxation. What is the preferred treatment for this injury?

- Total hip arthroplasty
- Closed reduction and an Ehmer sling
- Open reduction and an Anderson sling
- Supportive care

Explanation - Sacroiliac luxations in horses are generally considered untreatable. The condition will often stabilize with time and **supportive care with rest and NSAIDs**. Some horses may return to their previous level of activity or competitiveness but most have residual limitation. Reduction is not typically an option. Total hip arthroplasty has been reported in horses but is typically reserved for severely injured horses that do not improve with supportive care.

Question

A 15-year old gelding presents for acute lameness of the right thoracic limb. Pain is elicited in the foot with hoof testers. After close examination, you notice a draining tract at the coronary band. Based on the most likely diagnosis, what is your best treatment option?

- Surgical exploration
- Adequate drainage and poultices
- Corticosteroids
- Systemic antibiotics

Explanation - The most common cause of acute toe-touching, lameness in horses would be a **foot abscess** but other causes would include a **fracture of one of the bones of the distal limb**. Based on the fact that a draining tract is present, an abscess would be more likely and providing **adequate drainage** would be appropriate. Alternatively, if you still suspected a fracture, radiographs would be the next step to confirm this.

Question

You examine a 6-year old Quarter Horse gelding for a complaint of lameness. He has a short-strided, stilted gait in the forelimbs, is more painful on a hard surface than on a soft grass surface, and head nods when led in a tight circle at the trot in either direction. The hoof tester elicits pain in the posterior third of the foot on both forefeet. The hoof appears normal except that it has narrow heels. A block of the palmar digital nerves seems to result in loss of hoof tester sensitivity and an improved gait. Which of these is the most appropriate treatment?

- A shoe that elevates the heel
- A shoe that elevates the toe
- A shoe that elevates the lateral portion of the hoof
- A shoe that elevates the medial portion of the hoof

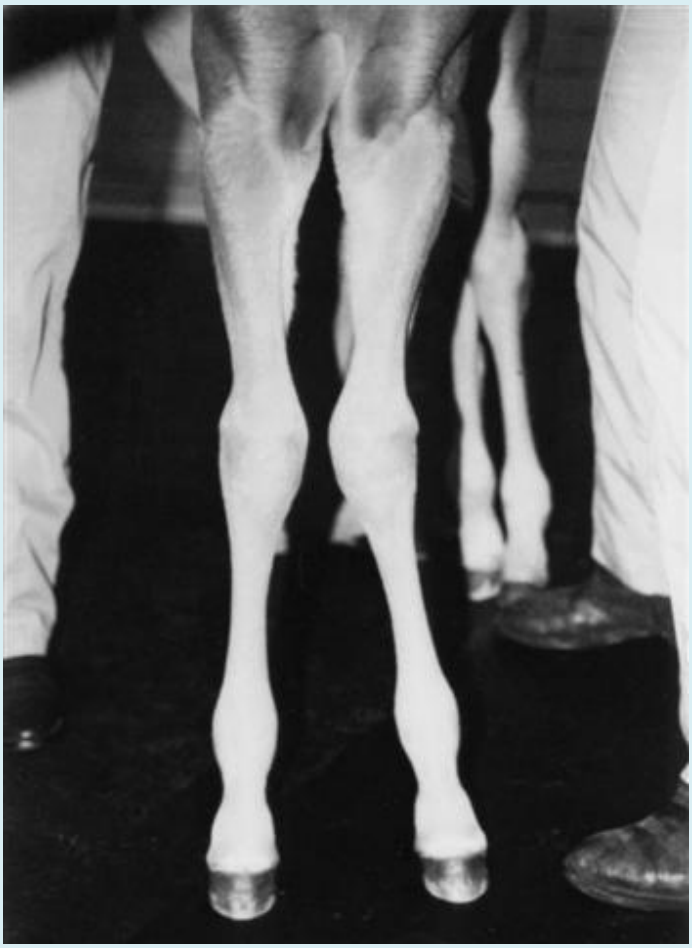
Explanation - The case describes a horse with **navicular disease**. Pain from navicular disease can be reduced by a **shoe that elevates the heel**.

Palmar foot pain can be the result of pain from any number of structures including the navicular bone,

navicular suspensory or deep digital flexor tendon, navicular bursa, or several other heel areas. Navicular disease is a term used for pain associated with any of these structures.

Question

The image shows a 2 month old Thoroughbred foal with a limb abnormality. What is the name of this abnormality?



- Osteoarthritis
- Carpus varus
- Septic arthritis
- Carpus valgus

Explanation - This is one of the most common angular limb deformities that occurs in foals. **Carpus valgus** is usually the result of asynchronous growth of the metaphyseal and epiphyseal growth plates.

Question

This 2 year old mare in the picture presents for an intermittent left thoracic limb lameness which resolves after working the horse. On physical exam, a palmar metacarpal bulge and inflammation could be palpated. What is your diagnosis?

- Tendonitis
- Suspensory ligament desmitis
- Laminitis
- Subsolar abscess

Explanation - The correct answer is tendonitis. The intermittent lameness and bulge at the metacarpals are classic for bowed tendon or tendonitis.

Question

You are asked to examine a 4-month old Saddlebred colt with acute onset of left front lameness. After performing a nerve block of the abaxial sesamoid region, the lameness resolves. You determine that the lameness is in the distal limb and perform the radiograph of the foot depicted here. What is your diagnosis?

- Normal; no skeletal abnormalities
- Fracture of P3
- Osteolysis of P3
- Fracture of the navicular bone

Explanation - There is an incomplete fracture of the left front third phalanx through the sagittal plane. The fracture plane extends to the subchondral surface but does not appear to go through the articular cartilage, as there is no displacement at the articular surface.

Question

A 9-year old Standardbred stallion comes to see you for evaluation of muscle atrophy. You examine the horse and note atrophy of the lateral thigh and gluteal muscles. When the horse is backed up, spasmodic hyperflexion of either hindlimb occurs resulting in a high-stepping gait. Which of the following is most likely responsible for the observed signs?

- Senecio or groundsel intoxication
- Sweet pea intoxication
- Red maple intoxication
- Castor bean intoxication
- Black walnut intoxication

Explanation - This case describes a horse with stringhalt or sudden flexion (contraction of the lateral extensor tendons) of one or both hind legs. It is most evident when the horse is backing up slowly or turning. It can involve one or both hind legs. The etiology in some cases is unknown but the condition can be

associated with chronic intoxication of sweet peas (Lathyrus spp.). Australian stringhalt has been associated with flatweed ingestion (Hypochoeris radicata). The precise pathogenesis is not understood, but a mycotoxin affecting the long myelinated nerves in the hind limbs has been suggested based on the types of nerve damage seen in affected horses.

Black walnut intoxication is associated with laminitis and colic after exposure to wood shavings of black walnuts. Red maple intoxication is associated with acute hemolytic anemia. Senecio or groundsel intoxication is associated with liver disease after chronic exposure. Castor bean intoxication is associated with severe gastrointestinal irritation and hemorrhagic diarrhea.

Question

An 8-year-old Warmblood gelding is presented to you for repeated but intermittent clinical signs of exercise intolerance, weakness, muscle fasiculations and a stiff abnormal hind-limb gait. The owners do not ride their horse regularly, but notice these clinical signs most often at the start of a trail ride. Based on the history, signalement and clinical signs, which of the following diseases to you suspect?

- Glycogen Branching Enzyme Deficiency (GBED)
- Immune-Mediated Myositis
- Polysaccharide Storage Myopathy (PSSM)
- Hyperkalemic Periodic Paralysis (HYPP)
- Malignant Hyperthermia

Explanation - Based on the breed and clinical signs, PSSM should be a top consideration. A subset of horses have a storage disorder in which there is an accumulation of glycogen and abnormal polysaccharide within the skeletal muscle. PSSM has been linked to an autosomal dominant mutation of the glycogen synthase gene in Quarter Horses. However, other breeds, such as Paint, Appaloosas, Warmbloods and draft horses can also be affected. Horses with PSSM often have elevations in creatine kinase and aspartate aminotransferase; rhabdomyolysis in PSSM likely results from an energy deficiency within the contracting muscles.
