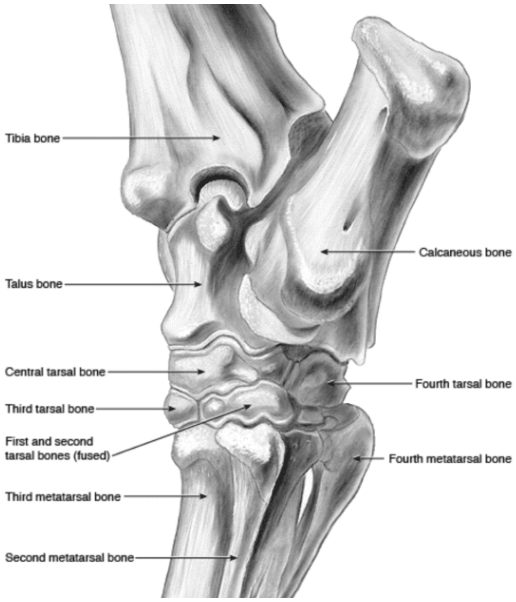
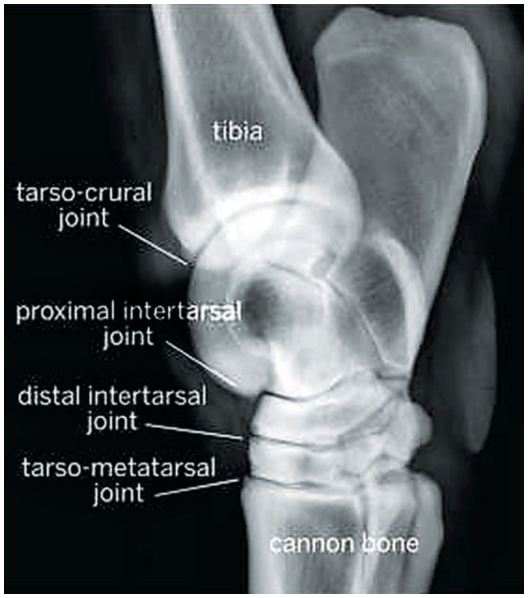
Anatomy of the hock

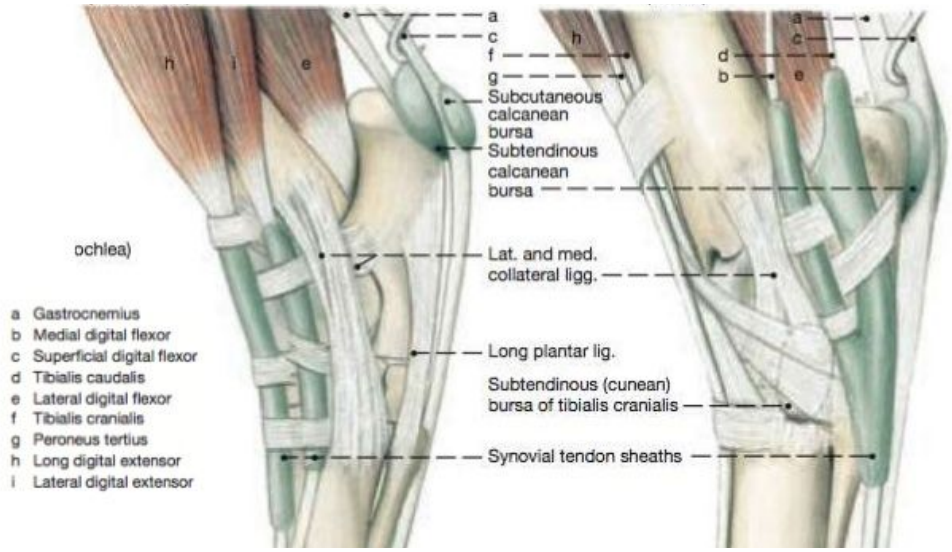
The hock is one of the most complicated joints in the horse made up of 10 bones (including the tibia and metatarsal bones) and 4 main joints (plus one other joint that doesn't often cause problems) each supported by multiple ligaments. The largest joint (the tarsocrural joint) forms the upper part of the hock and is known as a 'high motion' joint providing most of the hocks movement. The 3 lower joints (proximal intertarsal, distal intertarsal and tarsometatarsal) are 'low motion' joints and act as shock absorbers.

The bones and joints

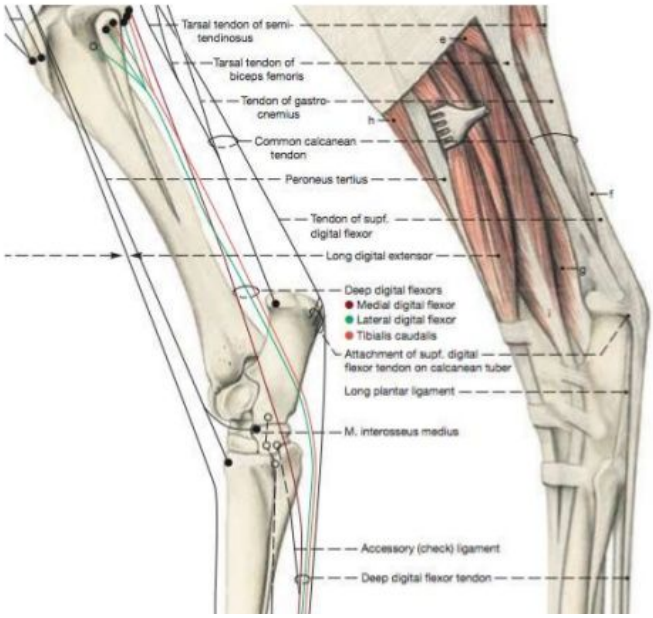




The bursae and tendon sheaths (these are sack filled structures with synovial fluid that cushions the structures around it):



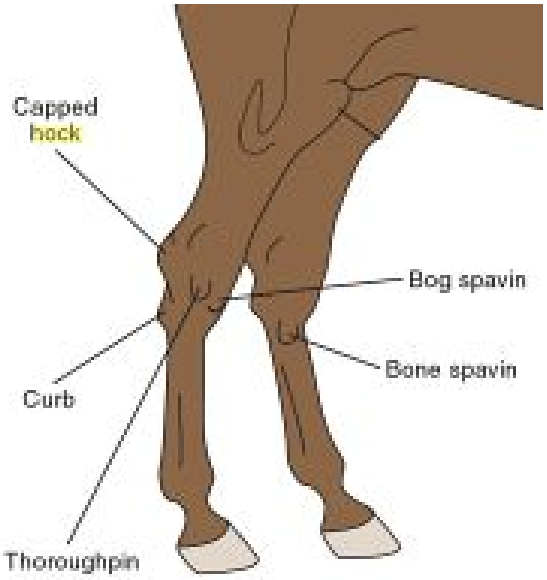
The soft tissues (muscles, tendons and ligaments)



Common problems in the hock

The hock plays a major role in a horse's movement, specifically the ability to generate power to jump and gallop, as well as 'sit' in dressage movements. We ask a lot of these joints and as such are prone to both degeneration and injury. Probably the most common hock issue seen is arthritis (anything from subtle drop in performance due to mild inflammation to severe lameness caused by bony changes). The hock is also very exposed and is prone to traumatic injuries; with so many synovial structures and joints, there is a risk of infection developing into an urgent matter.

It is important to make sure your horse is well balanced and has good shoeing as poor balance can put extra strain on the hocks which can lead to excessive pressures and inflammation.



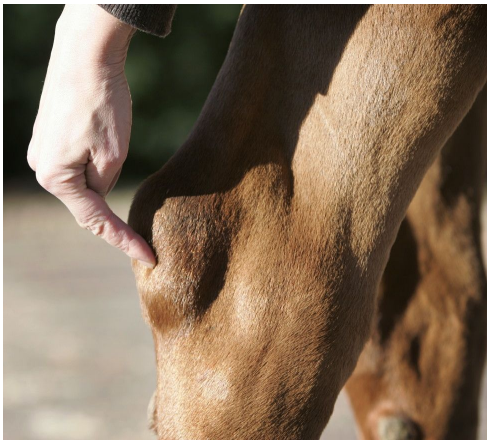
Bursitis

There are several bursae in the hock (e.g. calcaneal bursa) and inflammation of these structures is known as bursitis. The most common forms are listed below (e.g. capped hock and thoroughpin)

Treatment depends on the reason for the swelling, and as these structures are closely associated with tendons and soft tissues, it may be important to make sure these aren't damaged - this can usually be done with ultrasound. Sometimes X-ray is important to make sure there is also no bony damage.

If there is a wound associated with the bursitis, it can be an urgent matter to make sure the structure doesn't become infected. Otherwise, often the best first course of action is rest and topical therapy (cold therapy with ice packs or cold hosing) and anti-inflammatory creams (but these do have a withdrawal period!).

Sometimes the fluid can be drained under sterile conditions, the bursa injected with steroid and the hock bandaged, but the fluid often returns.



Capped hock

A capped hock is swelling over the point of the hock (the back of the hock). There are a number of structures in this area; the digital flexor tendon runs over the back of the hock here but a capped hock often involves the superficial bursa. The superficial bursa sits just under the skin and can become inflamed/swollen from trauma like a knock in the stable or field. Capped hocks are often just a blemish but if a wound is involved, the bursa can become infected which is a much more serious condition.

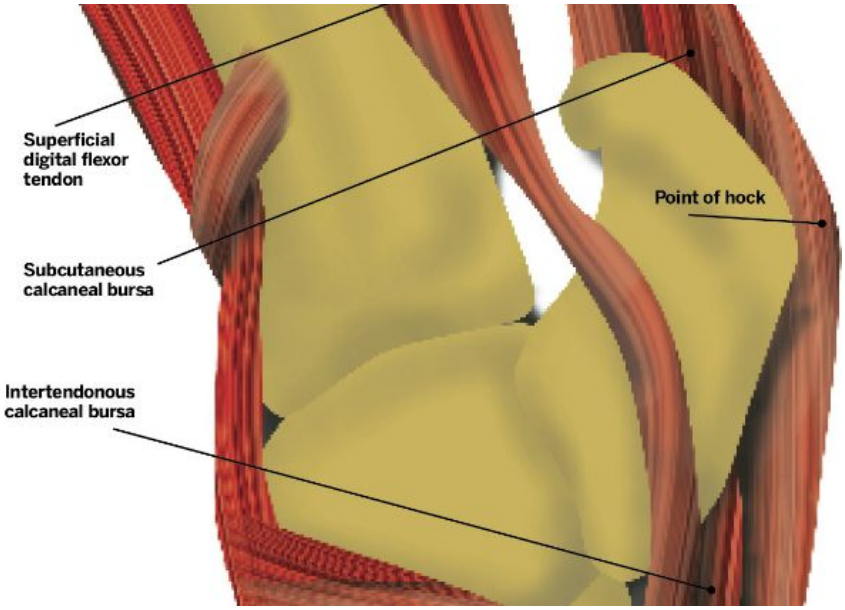
Thoroughpin

A thoroughpin is a swelling of the tarsal sheath of the flexor tendons in the hock often due to strain of the tendons (also known as tenosynovitis).

Slipped tendon (luxation of the superficial digital flexor tendon)-

The superficial tendon normally sits over the point of the hock (to the calcaneus) and is held in place by the retinaculum either side of the hock. When the tendon slips, it moves from the point of the hock either medially or laterally (to inside or outside of the leg) because of disruption to the retinaculum. Lameness is usually severe and starts suddenly with swelling over the point of the hock. Horses may panic if the tendon is moving on and off point of the hock and may kick out. In some horses, the tendon will return to normal position when

the horse is standing but move (luxate or subluxate) when the horse moves. In other horses, the tendon remains permanently displaced.
Diagnosis is confirmed with ultrasound.
Treatment usually involves rest initially but if lameness persists, movement to permanently displace the tendon or in some cases surgery can help.
Lameness usually improves, but the horse may be left with a ‘mechanical’ lameness i.e. where the horse’s movement is irregular but not painful. This may not be conducive to high level dressage work, but the horse may still be able to jump or race. The prognosis is generally better if the tendon has displaced to the outside of the leg rather than the inside.



Curb

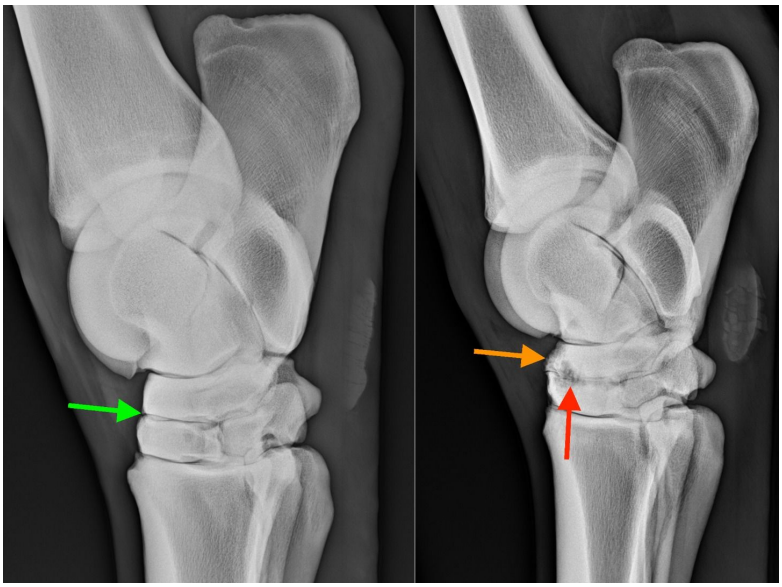
A term used to describe a number of injuries that cause swelling at the back of the hock, most commonly enlargement of the long plantar ligament but also may be caused by peritendinous-periligamentous inflammation, digital flexor tendonitis or a combination of injuries. Conformation abnormalities may predispose horses to developing a curb injury.
Diagnosis can be made depending on the degree of lameness and what can be seen and felt on examination and ultrasound for any specific injury.
Treatment: varies depending on which structure is involved but rest and anti-inflammatories (such as cold therapy and bute) initially help settle inflammation and controlled exercise thereafter. In some cases shockwave may be recommended to hasten resolution of a curb.

Bone spavin

Bone spavin is a term used for osteoarthritis (OA) of the lower hock joints (the tarsometatarsal TMT and distal intertarsal joints DIT). These joints are ‘low motion’ joints and mostly act to cushion force going up the leg when the horse is moving. It is very common in horses, especially mature sport horses and pleasure horses as well as young racehorses. It is caused by repeated compression of the bones and horses may be predisposed by poor conformation and possible hereditary factors and often worsens with time.

Signs: lameness in one or both hindlimbs or may even just have poor performance from reduced propulsion from behind. Horses often have a short choppy gait crossing their hindlimbs as they trot and may ‘toe drag’ squaring off the front of their toe; they are ‘flexion positive’ meaning they are sore when the leg is flexed.

Diagnosis may be made by blocking the joint with local anaesthetic, medicating the joint to see response to medication or X-rays. Many horses have mild changes in the joint which aren’t easy to see on X-ray but respond well to medication. (picture below: green arrow = normal DIT joint, red and orange arrows = DIT joint with arthritic change).



Treatment:

Medicating the joint: Most commonly we use steroids to reduce the inflammation in the joint and therefore the pain. If there is an obvious reason for the stress on the hock and there is little bony change in the joint, sometimes one lot of medication is enough to settle the inflammation, but steroid medication often need to be repeated every 6 months (this time scale will vary on a case by case basis depending on how much stress the hocks are under and how sore they are).

We can also medicate the joint with a ‘gel’ called arthramid/aquamid which is a polyacrylamide hydrogel. Originally used as a lip filler in humans, this is a very safe injection that helps cushion the joint to reduce inflammation and pain. This isn’t associated with the same risks of laminitis that can be seen in steroids and can last much longer in some horses.

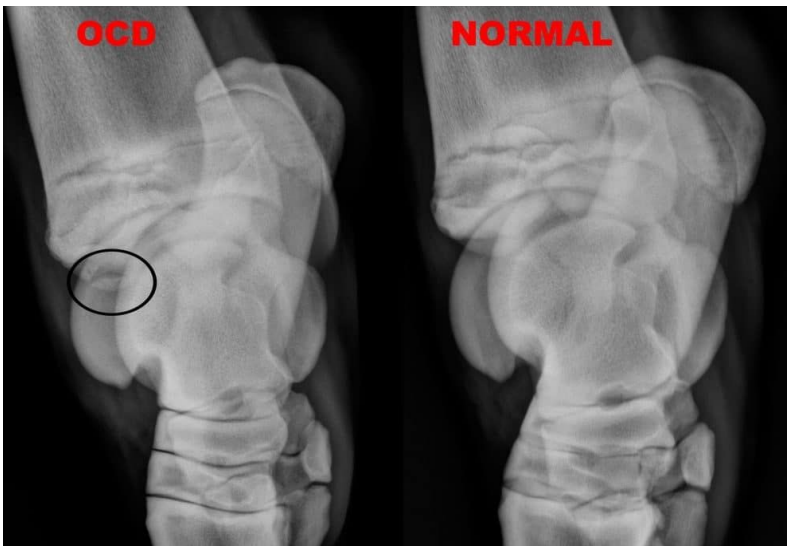
Pain relief: Bute can help control how comfortable the horse is to allow them to live a normal life but only masks any problems. Because there can be side effects with long term use of bute, we often try to use other methods of treatment

Supplements: Joint supplements can be a minefield; there are a wide range of supplements on the market and often these fall short of what is on the label. Evaluating your horse's condition is the best tool to see if what you are buying is making a difference but unfortunately you usually get what you pay for; cheap supplements usually are cheap for a reason. Research proven ingredients include glucosamine, chondroitin, fish oils (EPA and DHA), green lipped mussel and MSM. Turmeric with black pepper has also shown some promise. Supplements can be great for helping support healthy joints and can ease pain, but it is important to note that they will not fix a problem if there is one and delaying treatment can worsen arthritis.

Joint fusion: often a last resort, the lower hock joints can be fused together eliminating pain

Bog spavin

A fluid distention of the tarsocrural joint. The swelling can be seen and felt at the front and on the outside of the hock. Bog spavin is a sign rather than a diagnosis and may be caused arthritis, OCD, trauma and infection. Diagnosis and treatment will vary depending on the cause of the swelling.



OCD (osteochondritis dissecans)

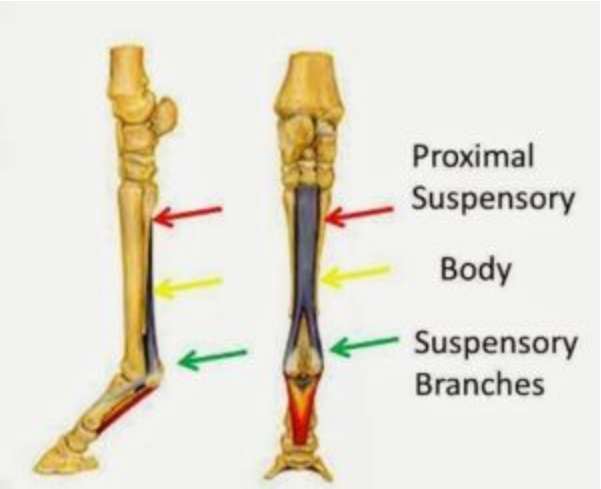
OCD is a developmental disease that affects the cartilage and bone in the joints of horses. Cartilage in the joints doesn't form properly causing the cartilage and underlying bone to become irregular; this can cause cartilage and bone flaps to remain partially attached or break off and float around the joint. Over time, these loose areas can cause inflammation and arthritis. OCD is usually caused by a combination of factors: genetics, rapid growth of the horse, nutrition when growing (high carbohydrate diet or mineral imbalance), trauma and exercise (can be involved in formation and loosening of the fragment).

Signs: the most common sign is effusion (swelling) of the joint in a young horse. Signs may appear when the horse is only months old but may not occur until the horse starts work. Occasionally the horse may only become lame as an adult when a fragment breaks off into the joint. Lameness varies with location and severity of the OCD.
Diagnosis: X-rays will allow you to visualise any chips/fragments of bone and occasionally when a fragment is may entirely of cartilage only irregularity of the bone may be seen. Often this is a bilateral condition so x-rays of the opposite joint are often taken as well.
Treatment: usually the best treatment is surgery to remove abnormal bone and cartilage.

Other problems:

Suspensory ligament injuries

These ligaments are closely associated with the hock and in some cases horses have both hock pain and suspensory pain- but this isn't truly part of the hock.



Cellulitis/Lymphangitis

Cellulitis at the hock can be caused by infection with a sudden hot painful leg. Lameness can be severe and horses can become dressed and develop life threatening complications (such as necrotic skin and laminitis). Treatment usually involves anti-inflammatories and antibiotics, movement little and often helps to shift any swelling but it is important to make sure there is no concurrent injury.

Fractures

Fractures of the small bones in the hock happen most commonly in thoroughbreds and usually cause acute severe lameness exacerbated by flexion. They may be associated with heat, swelling and pain. Diagnosis is made by X-ray but occasionally may not be visible until 7-14 days after injust when the fracture line resorption becomes visible on X-ray. CT or bone scan can sometimes be useful for these subtle fractures.

Best of luck in the New Year,

Buffy x

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