Lameness and current treatment options in the Performance Horse
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There are 2 principal categories of lameness in the performance horse – Developmental Orthopaedic Disease and Traumatic Orthopaedic Disease.

**Developmental Orthopaedic Disease**
Conditions falling under the umbrella of Developmental Orthopaedic Disease are those that typically arise in foals and young horses. Some, such as Angular Limb Deformities or Contracted or Lax Tendons occur in foals from a few days to a few months after birth. Others such as Subchondral Bone Cysts (SBC) or Osteochondrosis (OCD) become apparent at a slightly older age.

Angular limb deformities are most frequently managed by trimming or supporting the hoof with acrylic hoof extensions or glue on shoes. More severe limb deformities that don’t respond to conservative treatment may require surgery to correct.

Many foals are born with Lax tendons, which tighten up over a few days after birth, with relatively little input required other than the application of some light bandages or use of a deep bed to prevent skin abrasions.

Contracted tendons may cause more of a problem, and if severe may prevent the foal from nursing. They may be treated using intravenous oxytetracycline to cause relaxation of the musculotendinous unit and permit stretching. If this fails to work then it may be necessary to force the tendons to stretch through the application of an acrylic extension to the hoof, or through the use of a splint. Surgical intervention may be attempted but only in severe cases that don’t respond to any of the above treatments.

Subchondral Cystic Lesions, which occur when there is incorrect development of the bone just beneath the cartilage of a joint, typically cause lameness in the first 2 years. They may be treated by conservative treatment (rest) with concurrent intra-articular injection, or through a number of surgical interventions including injecting the cyst or drilling through it with a screw.

Osteochondrosis Dissecans (OCD), lesions are frequently found between 1 and 3 years. They occur when there is abnormal development of the cartilage within joints potentially leading to fragments of cartilage floating within the affected joint. Young horses with small lesions, that do not detach, may resolve with rest but larger lesions that are causing swelling and lameness require surgical removal of the fragment(s) and assessment of the interior of the joint.

Horses with Subchondral Bone Cysts and/or OCD lesions that have undergone treatment can benefit from post-operative joint medication. This can help to aid healing and to maintain joint health when back in work. Pinkham Equine offers a number of different types of joint medication – see below.
**Traumatic Orthopaedic Disease**

Traumatic Orthopaedic Disease commonly affects athletic horses during their competitive career, and frequently requires on-going management to enable continued high-level performance. Pinpointing the location and the degree of damage is crucial to deciding which treatment option to use.

Horses may present as overtly lame or with a loss of performance or change in behaviour. Initially the horse should be seen moving on hard and soft surfaces, and often ridden. Nerve or joint blocks may be necessary to identify which structure is affected, which can then be imaged using our high quality, mobile ultrasound and digital radiography systems. At this stage a treatment options will be discussed – sometimes surgical in the case of a fracture repair or a bone fragment needing removal, but often where surgery is not required, treatment takes the form of an injection into a joint, tendon sheath or directly into a tendon or ligament injury under ultrasound guidance. The aim of these medications is to reduce inflammation, to promote healing and to facilitate the early return to athletic performance.

The following are the different types of medication that can be used:

**Corticosteroids** are unparalleled in their ability to reduce inflammation, especially in an otherwise undamaged joint or tendon sheath. However, if used too frequently or at too high a dose, then they may cause side effects or result in deterioration in the health of the joint. They may also be inappropriate in certain cases such as young horses, or those with an increased laminitis risk owing to concurrent medical conditions.

**Hyaluronic Acid** – a natural constituent of joint fluid, frequently used in conjunction with corticosteroid to prolong the anti-inflammatory effects. It may be injected into a joint alone, or given intravenously, particularly in the run up to, or at a competition.

**Arthramid** – a polyacrylamide hydrogel that, when injected into a joint integrates with the joint capsule and attracts water into the joint, creating a cushioning effect. Arthramid is appropriate for use in all horses, including those in which steroids may not be used, or in degenerative joints that no longer respond to steroid medication. In such cases we also consider the use of regenerative or biologic treatments.

In recent years the use regenerative medications have become increasingly widespread. Various types of regenerative medication are now available:

**Interleukin-1 Receptor Antagonist Protein (IRAP)**

IRAP contains both anti-inflammatory molecules (IL-1ra) and growth factors (IGF-1 and TGF-β), and when injected back into the joint it reduces inflammation and stimulates cartilage cells to repair and grow, improving the long-term health of the joint. IRAP may also be injected into tendon sheaths.

IRAP is created by drawing blood from the horse and incubating it for 24 hours with enzymes that stimulate the blood cells to produce the anti-inflammatory molecules and
growth factors. The blood is then processed to produce the serum containing the molecules, which is then stored until required for use. In order to achieve its full effect joints are typically treated with IRAP on 3 occasions at 7-14 day intervals, to prolong the effects.

**Pro Stride**

Pro Stride is the most recent development currently available in the regenerative medicine field, and may be considered to be a successor to IRAP. Blood is drawn from the horse, processed on the yard, creating a solution containing high concentrations of both anti-inflammatory proteins and growth factors. The inclusion of blood cells and platelets in the solution results in prolonged production and presence of these molecules in the treated joint.

Unlike IRAP which must be incubated for 24 hours and processed in a laboratory at the practice, Pro Stride is created on the yard in less than 20 minutes, enabling horses to be examined and treated in a single visit. A single treatment of Pro Stride may result in resolution of lameness for a year or more, enabling the treated horse to return to work sooner and remain in work for longer than we have previously found when using IRAP. Pro Stride is appropriate for use in virtually all joints and in horses of all ages, and is particularly effective at improving the health of joints with relatively advanced osteoarthritic signs.

**Platelet Rich Plasma (PRP)**

PRP consists of a concentrated solution of platelets - small cell fragments that are a potent source of many different growth factors, which when injected into damaged tissue, stimulate production of repair tissues - the Extracellular Matrix. The result is an improved speed and quality of repair with a reduction in scar tissue. Scar tissue is weaker than undamaged areas of tendons and ligaments, and severe scarring may result in an increased chance of repeat tendon or ligament injury.

PRP is created by harvesting blood from the horse, processing and centrifuging it to create a concentrated solution of platelets within 15 – 30 minutes.

**Stem Cells**

Stem cells are most frequently used to treat severe, core tendon or ligament injuries, and following keyhole surgery (arthroscopy) performed on the navicular bursae and stifle joints – structures with large soft tissue components which benefit from the addition of stem cells during the healing process.

Stem cells are harvested from either the horse’s sternum or pelvis, and sent to an external laboratory to be cultured for between 2 and 4 weeks, until the required number of cells has been grown. At this point they are couriered back to the horse’s yard where a vet from Pinkham Equine will be ready to inject them back into the horse.

As part of Pinkham Equine’s commitment to providing the most advanced treatments to our clients, in addition to utilising the best quality diagnostic equipment, we have also recently invested in a centrifuge that permits us to offer both Pro Stride and Platelet Rich Plasma (PRP) treatments on your yard. We wish to see your horses perform to the utmost of their ability, and this will enable us to offer the very latest anti-arthritic and soft tissue injury treatments to your horse, on your yard, in a single visit.