

# If Only They Could Talk



Our regular focus on equine health. This month vet **JOHN MARTIN** discusses tendon injuries.

**F**OLLOWING THE remarkable exploits of Living Legend in the past few weeks, I felt it was appropriate to re-visit the topic of tendon injuries, a subject I first covered more than 10 years ago.

Although our approach to managing these injuries has not altered significantly since then, Living Legend's amazing journey after suffering a 'bowed tendon' has made me reconsider the prognosis for these injuries, particularly if a horse is given sufficient time to recuperate.

Tendons are structures composed of dense, longitudinally arranged fibres which attach muscle to bone. The tendons most injured in the racehorse are the superficial digital flexor tendon (SDFT) and deep digital flexor tendon (DDFT). These tendons run from the back of the knee and hock and attach to the bones below the fetlock, acting to support and flex the fetlock joint.

'Bowed tendon' is a term which refers to tearing of the fibres in the SDFT -- 'bowed' because of the classical bowed appearance of the damaged tendon.

Immature tendons have an ability to adapt to the pressures and strains they are

exposed to, a property that deteriorates with age, and hence tendon injuries are more commonly seen in the older horse. Any factor which causes the tendons to be stretched beyond their capacity will cause the fibres in the tendon to tear.

These factors include fatigue, uneven surfaces, incorrect shoeing leading to long toes and low heels, loss of balance or inadequate training and conditioning for the level of work being undertaken. The degree of damage can range from minor, with little fibre damage, to severe with total tendon rupture.

Most often, a proportion of the tendon fibres are damaged, extending for a variable length of the tendon. It can often result in a discrete hole in the centre of the tendon which can be seen on ultrasound scan. This is known as a core lesion.

## Diagnosis of a bowed tendon

A tentative diagnosis of tendon damage can be made by the classical signs of heat and swelling around the tendon area. The tendon itself will also be thickened and painful to palpate. These signs should be



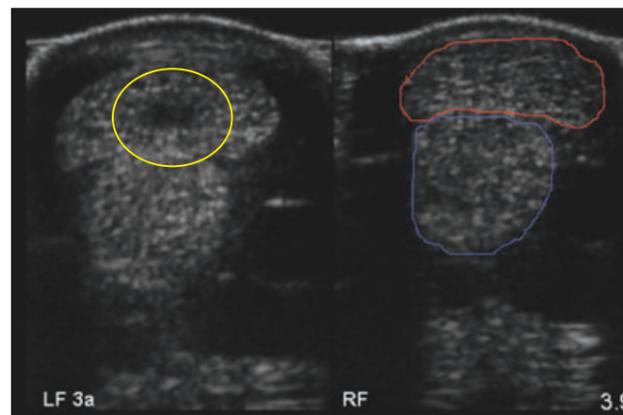
Bowed tendon

taken very seriously when noticed. Ultrasound exams of the tendon are used to confirm the diagnosis. They will also allow assessment of the degree and extent of fibre damage within the tendon.

## Treatment

In the early stages of tendon damage, aggressive anti-inflammatory therapy is essential and should be instigated once a tendon injury is suspected. This includes cold therapy in the form of cold hosing, ice-bubble boots and swimming.

The horse should also be given systemic anti-inflammatory drugs, most commonly phenylbutazone, or 'bute'. Both front legs should also have support bandages applied. It is essential to begin anti-inflammatory therapy immediately as damage to the tendon causes a significant inflammatory response, which if not controlled early, will lead to scarring and adhesions within the tendon. The horse should remain on box rest during this inflammatory stage, being led out only for swimming exercise and cold therapy.



Ultrasound scans of horse's tendons. On the right are normal SDFT (red) and DDFT (blue) tendons. The left scan shows a bowed tendon with a large core lesion (yellow).

Once the initial inflammatory phase is over and under control the next step in treatment is time and patience. The horse should be slowly re-introduced to controlled exercise, beginning first with walking exercise in addition to swimming. We will typically follow this controlled exercise regime for 3-6 months depending on the severity of the injury and practicalities of turning the horse out to paddock.

Since my initial article on this topic we now have the added benefit of our water-walker facility at Kingsley Park, which replaced conventional horse-walker exercise for these patients and is an excellent tool to have at our disposal in managing inflammation in the lower limbs. After this period of controlled exercise we will look to give the horse some turn out in a paddock.

In general, tendon injuries generally carry a poor prognosis for full recovery due to their poor healing capacity. This can be attributed to a poor blood supply in the area. The length of time which it takes for a tendon to heal can vary a lot depending on the degree of damage and also the age of the horse, with injuries in younger horses generally healing much quicker and with a higher probability of a return to racing.

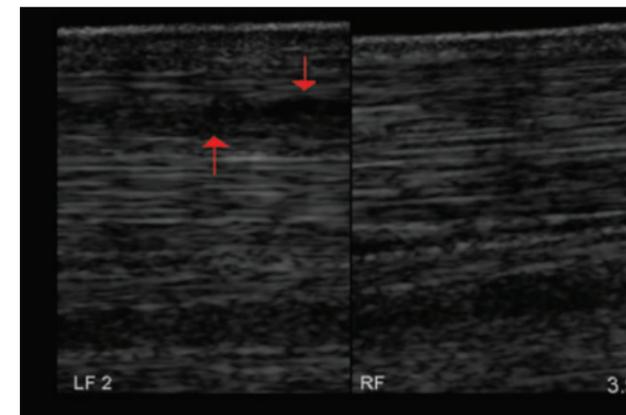
In older horses with a significant disruption to the fibre pattern of the tendon it would appear the longer the time off, the better, as Living Legend appears to be proving, having returned to the track after a staggering 841 days, the majority of which was spent in the

paddock or loose housed.

## Swimming as part of recovery

There are many techniques which have been tried in attempt to accelerate the healing of bowed tendons. The most infamous of these is probably firing, in which a hot iron is used to induce inflammation. This was documented as a treatment method as early as 500 AD. The theory is that the act of firing the horse's leg causes an inflammatory response in that area which will also promote healing of the damaged tendon. There is little scientific evidence to back up the practice.

The most recent therapeutic method tried on tendon injuries is injecting the damaged area with Platelet Rich Plasma (PRP). Platelets are cells found in the bloodstream which are responsible for blood clotting but are also part of the repair process in injured tissues by releasing growth factors. With PRP injections, plasma is extracted from the patient's blood and injected into the



Longitudinal scans of the tendons. On the right, each long white line is a healthy tendon fibre. On the left, is a dark area between the red arrows where the fibres have been torn.

area of damaged tendon. The plasma which is collected from the horse has a high concentration of growth factors which enhance tissue healing and increase circulation to the area.

While the theory of this sounds promising in practice I don't believe this is necessarily the answer to the age-old problem of how to treat a tendon injury. In time with further advances in human and veterinary medicine a solution may be found, but for now it seems aggressive anti-inflammatory therapy in the short term followed by an abundance of time and patience seems to be the best approach.

Here at Johnston Racing if a horse is suspected to have a tendon injury the aggressive anti-inflammatory therapy which is so crucial in the early stages will be started immediately. Ultrasound scans will also be performed on site so that an accurate diagnosis and prognosis can be established from the outset.

The horse will stand in iced bubble boots daily and will also begin swimming and, when appropriate, water-walker exercise which is not only excellent anti-inflammatory therapy but also allows the horse to maintain condition and a level of fitness which would not be possible if the horse was on total box rest. The healing progress of the tendon will be monitored with regular scans before the horse is re-introduced back into work.



The water-walker and swimming pool at Kingsley Park

• At Johnston Racing, all anti-inflammatory therapy and ultrasound scans are included in the daily training rate.

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