Pall’s Acelere™ fPRP system, offered exclusively by VetCell, uses filter-based technology to provide equine veterinary surgeons with a quick and easy way of obtaining a concentrated solution of platelets in the field or the clinic.

One of the practical limiting factors in the use of autologous PRP has been the requirement for laboratory facilities to obtain suitable preparations. VetCell, in collaboration with Pall Corporation, the largest filtration, separations and purifications company in the world, has developed a closed filtered system which utilises a simple disposable kit to obtain a concentrated solution of autologous platelets in the clinic or in the field. Key to the success of this system is the filter and proprietary processing solutions which have been optimised specifically to trap equine platelets. Importantly the Acelere™ fPRP system eliminates concerns about immunogenic reactions and minimises the chances of infection or disease transmission as the solution is autologous and is generated in a closed system.

**Procedure**

Harvesting the fPRP is a very straightforward procedure taking approximately 10 minutes. Venous blood is taken and mixed with a capture solution in the collection bag before being passed through the filter where platelets are captured. Back-flushing the harvest solution through the filter recovers the fPRP into a syringe. The procedure requires no power source or specialist equipment.

**Injuries**

Injury to this structure is most common in the sports horse and its incidence increases with age.

**Proximal Suspensory Disease**

Proximal suspensory desmitis has become a commonly diagnosed cause of forelimb lameness in recent years. It is frequently, though not always, associated with a straight hock and hyperextended MTP joint. When diagnosing this condition the response to analgesics of the deep branch of the lateral palmar/plantar site should be compared with the response to a low 4/6 point to rule out distal limb pain. It is also important to avoid confusing enthesious new bone with a stress fracture of the body of the ligament and the underlying bone surface. Longitudinal views can help in identifying enthesious new bone at the origin of the ligament which is associated, at least when observed radiographically, with a poorer prognosis in hindlimb cases. Care should be taken to avoid confusing enthesious new bone with calsi surrounded a palmar cortical fracture (usually only seen in foals). This stress fracture of the metacarpus is unrelated to the suspensory ligament and the ligament should have a normal appearance in those cases in contrast to when enthesious new bone is present.

There are stark differences in the prognosis for fore and hindlimb proximal suspensory desmitis. Acute forelimb proximal suspensory ligament desmitis carries a good prognosis with ~90% horses returning to work following conservative management (Dyson 2000). The figures for chronic (with lameness of more than three months duration) hindlimb proximal suspensory desmitis are more uncertain. For the hindlimb equivalent, the prognosis for acute desmitis is much worse (13% sound and in full work at six months; Dyson 1994), with the prognosis for chronic hindlimb cases approaching 0%.

Treatment options include initial box-rest with walking exercise for three months, followed by an ascending exercise regime. Refractory cases have been treated with extracorporeal shock wave therapy with reported significant improvements in prognosis in chronic hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases. Local neurectomy and fasciotomy has also been used in non-responsive hindlimb cases.

**Fig. 1 & Fig. 2** Transverse and longitudinal ultrasonographs from the proximal metacarpal region, showing a large hypoechoic region in the proximal suspensory ligament, characteristic of severe proximal desmitis.
Treatment and prognosis of body and branch injuries

Lesions of the body of the suspensory ligament are rare in horses, where pathology of the body of the suspensory ligament usually stems from proximal extensions of branch injuries. Isolated lesions are more common in racehorses. Ultrasonographic pathology varies from focal lesions to the most common enlargement and generalized hypoechochogenicity (Fig. 3).

Unlike tendon injuries, where healing tends to occur with intratendinous fibrosis, the suspensory ligament appears to heal with both intra- and peri-ligamentous fibrosis. When imaging the branches from the medial and lateral aspects of the limb, this peri-ligamentous fibrosis which can separate the two-strap shaped branch from its usual position adjacent to the skin is a telltale sign of previous desmitis.

As with acute lesions in other areas of the suspensory ligament, acute branch desmitis has a variable ultrasonographic appearance although enlargement and local hypochoegenicity are commonly seen. (Figs. 4 & 5) and in some cases the lesions can extend proximally into the suspensory ligament body. As with all distal limb strain injuries, careful evaluation of the contralateral limb is important, as biaxial and bilateral injuries are common. In hindlimbs, a progressive degenerative desmitis can precede the contralateral limb is important, as biaxial and bilateral injuries are common. In hindlimbs, a progressive degenerative desmitis can precede branch desmitis in a thoroughbred racehorse. Ultrasonographic pathology varies from focal branch desmitis to a variable ultrasonographic appearance although characteristic of severe branch desmitis (Fig. 3).

Fig.3 (above) Transverse ultrasonograph from the mid-metacarpal region of a horse with branch desmitis.

Case Study: Severe branch desmitis treated with Acelere™ FPRP system

Case Details
A 7 year old thoroughbred racehorse was presented with a right forelimb lameness. On ultrasonographic examination a hypochoogenic region in the medial branch of the suspensory ligament was identified, (Figs. 6 & 7) and this was established as the cause of the lameness.

Treatment
The patient was restrained and sedated with a combination of detomidine HCL and butorphanol. The affected branch area and subsartorial and antecubital areas were clipped and aseptically prepared. To ensure complete desensitization a unilateral low limb block was performed. Autologous platelets were harvested using the Acelere™ PRP system. A total of 7.5ml of platelet solution was harvested with a total platelet count of 789 10^3 platelets/mm^3. Using ultrasound guidance, a 23 gauge needle was inserted into the lesion and the platelet solution was implanted directly into the lesion. The limb was then bandaged, the horse box-rested for 7 days with 3 days routine antibiotics (intramuscular nitrofurantoin). The patient then

Further reading

Acellular platelet-enrich products, such as that produced by the Acelere™ FPRP system has shown that PRP can be safely used in horses and represents a novel, valuable alternative and/or adjunctive treatment for equine wound healing. Platelet-rich plasma gel promotes differentiation and regeneration during equine wound healing. Carter CA, Sally DG, Worsin CI Sr, Hendren

Fig. 7 Longitudinal ultrasonograph of the affected branch.

Fig. 8 Transverse ultrasonograph of the affected branch 8 weeks post treatment with Acelere™ FPRP system.

Recent use of platelet enriched products, such as that produced by the Acelere™ FPRP system has shown that PRP can be safely used in horses and represents a novel, valuable alternative and/or adjunctive treatment for equine wound healing. By introducing autologous platelets and growth factors to the injured tissues. Activated platelets release high levels of various growth factors that are believed to enhance the healing response and quality of repair in the treatment of wounds. A concentrated platelet solution produced using the Acelere™ FPRP system can deliver a high concentration of these growth factors to the injured tissue. Implementation of Acelere™ PRP system derived platelets into a core suspensory branch lesion appears to have associated with a resolution of lameness and a significant improvement in the ultrasonographic appearance of the injured area. This provides support for the clinical use of the Acelere™ FPRP system in the treatment of these injuries.