



Ollie Crowe

B&W Equine Group Ltd,  
B&W Hospital, Breadstone,  
United Kingdom

## TREATMENT OPTIONS FOR SUSPENSORY LIGAMENT DISEASE

Treatment and prognosis of forelimb and hindlimb proximal suspensory desmitis differ markedly. The prognosis for forelimb disease is considered good and in many cases a period of rest and controlled graduated exercise is sufficient to return a horse to work. In the author's practice horses receive six weeks of box rest and walking exercise, followed by a clinical and ultrasonographic review. If the horse is sound in trot at that stage and there is evidence of lesion healing (reduced size of hyperechogenic lesions and evidence of infilling of defects and improved fibre pattern) then trotting is gradually reintroduced over the following six-week period. If the horse remains sound and shows adequate ultrasonographic evidence of healing the horse can recommence canter work for 4 weeks before re-entering training.

In horses that remain chronically lame despite a prolonged period of rest with controlled exercise, surgical neurectomy of the deep branch of the lateral plantar nerve has been described. In a report of 4 cases in this way by Gay Guasco et al (2013) all horses were returned to soundness after surgery and remained sound for a year thereafter. The surgery is technically easier than in hindlimbs but required much less often. In the author's experience, the risk of ligament breakdown appears to be significantly higher than in hindlimbs, consequently, in our practice this treatment is reserved for horses that have remained lame for at least several months.

Hindlimb proximal suspensory desmitis carries a much worse prognosis for return to athletic soundness, especially if the condition has been present for more than 12 weeks prior to diagnosis and introduction of controlled exercise (Crowe et al 2004). This may result from compartmental-type syndrome caused by the restriction of expansion by the surrounding bone and deep metatarsal fascia. A study by Toth et al (2008) found histological evidence of compression injury to the deep branch of the lateral plantar nerve following surgical resection in clinical cases and it was suggested that that alone may account for persistence of lameness. Dyson et al (2015) also reported the presence of adhesions between the suspensory ligament and adjacent tissues, which

was considered a possible explanation for surgical failure but could also contribute to continued lameness with conservative treatment.

### **Additional treatment strategies for proximal suspensory desmitis**

**Shockwave therapy** – Shockwave or radial pressure wave therapy was found to improve the outcome for chronic hindlimb proximal suspensory desmitis when compared to results in a previous study for conservative management alone (Crowe et al 2004). It is unclear whether there is any benefit for treating forelimb proximal suspensory desmitis.

**Periligamentous corticosteroid injection** – The compressive nature of the condition in the hindlimbs has led several practitioners to inject steroid adjacent to the ligament in acute cases of proximal suspensory desmitis. Anecdotally that has enabled some horses to make an early return to work and remain sound. In the author's experience this is often a temporary measure allowing a horse to complete a competition season but lameness usually returns. A large-scale long-term study of this approach is required to validate it.

**Intra-lesional biologic therapy** – platelet rich plasma (PrP), acellular bone marrow (ABM) and mesenchymal stem cells have all been injected intralesionally according to anecdotal reports. There have also been small numbers of case series describing their use in treatment of suspensory injuries (mostly suspensory ligament branches) (Castelijns et al 2011, Garrett et al 2013) and they are commonly used in practice, often accompanied by confident statements of their efficacy. In vitro work has suggested that these biologic treatments may be able to deliver useful growth factors and most of the case series report a positive outcome with treatment. However, a recent systematic review of studies on the use of PrP in human and equine musculoskeletal lesions found that "Poor study design was a common feature of equine clinical trials. From studies in which PRP had beneficial effects, 67.8% had an overall high risk of bias. From the studies in which PRP failed to exhibit beneficial effects, 67.8% had an overall low risk of bias" The overall quality of the study design was less than ideal in the majority of the selected studies and the quality was inversely correlated with the performance of PRP in clinical trials (Brossi et al 2015). In the equine studies assessed, only one (Garrett et al 2013)

was a randomized controlled trial and that reported largely negative results. While these therapies appear to be safe, with limited side effects, there is currently a lack of evidence to support their use in the clinical setting.

**Neurectomy of the deep branch of the lateral plantar nerve** – This surgical procedure has been described with reported success rates originally between 62 and 91% (Dyson and Murray 2012). In their paper, Dyson and Murray (2012) found that horses with a straight hock and hyperextension of the metatarsophalangeal joint did not return to soundness but that in horses with proximal suspensory desmitis alone and a normal conformation 77.8% had a successful outcome, a figure that was reduced to 44.2% when other orthopaedic conditions were present. The legality of competing horses that have had this procedure remains open to question and the procedure does carry a small but currently incompletely quantified risk of catastrophic breakdown of the suspensory apparatus. However, it has returned very large numbers of horses to soundness and work that would otherwise have been retired.

### **Conclusion**

Proximal suspensory desmitis remains a challenging condition to definitively diagnose and treat and is an important cause of lameness in athletic horses. A combination of regional analgesia with ultrasonography and radiography remains the mainstay of diagnosis but advanced imaging techniques may become more common and useful in future. Treatment has improved with the advent of surgery and new biologic therapies carry some hope of further improvements but much more evidence is required of their positive impact on outcomes.