Hind limb proximal suspensory desmitis (PSD) is an inflammation of the suspensory ligament just below the hock. Inflammation in this location can be a very frustrating, difficult problem to treat. However, new treatment options have improved the chances of returning horses to athletic soundness. These treatment options include injection periligamentous injections of steroids with or without Adequan or Sarapin at acute onset before ultrasonographic changes occur, shock-wave therapy, intralesional injections guided by ultrasound, and surgery.

Extracorporeal shock-wave therapy, which focuses a rapid pulse of pressure on targeted areas to induce healing and reduce pain, typically consists of three treatments, 10 to 14 days apart. Results of a study of shock-wave therapy revealed that 41% of horses with affected hind limbs returned to athletic soundness within six months of treatment.

Five types of intralesional injections that employ regenerative medicine have been used to treat PSD: ACell Vet extracellular matrix powder, autogenous bone marrow, autologous stem cells, adipose-derived stem cells, and platelet-rich plasma.

(BULLET)ACell Vet powder contains numerous proteins derived from pig bladders that form a three-dimensional scaffold to which the building blocks of new tissue can adhere and organize. In 101 horses with tendon or ligament damage, ACell Vet powder was successful in approximately 80% when combined with surgery. An early study of its use showed that 19% of horses treated with ACell Vet powder experienced mild-to-moderate pain at the injection site within 24 hours and 82% had hind limb edema after injection, so further investigation of this treatment is warranted.

(BULLET)Autogenous bone marrow is extracted from the patient’s sternum and then immediately injected into the lesion in the suspensory ligament. Of 100 horses treated, 84 returned to full work and soundness within six months. Bone marrow is rich in mesenchymal stem cells, fibrin, granulocytes, monocytes, neutrophils, and growth factors.

(BULLET)Autologous stem cells also are derived from bone marrow in an 18-day process that takes stem cells from the marrow and then expands them in culture. The stem cells are resuspended in bone marrow and returned to the veterinarian for injection into the lesion. The advantage of this process is that a much greater number of stem cells are delivered to the site. There are no studies of the efficacy of treating suspensory injuries with autologous stem cells but has been shown to treat tendon injuries successfully.

(BULLET)Adipose-derived stem cells are harvested from fat at the horse’s tailhead, transferred into syringes, and returned to the veterinarian for injection into the ligament. In horses treated with this therapy, microscopic examination showed significantly improved tendon fiber architecture, reduced inflammatory cells, and improved fiber density and alignment. Anecdotal success is encouraging, but more scientific research is needed.
Platelet-rich plasma, which contains a wide variety of growth factors, is produced by processing whole blood to obtain the blood fraction with the highest concentration of platelets. The growth factors attract healthy inflammatory cells to an injured area, which causes regeneration of tissue. No scientific study has demonstrated the efficacy of this procedure, although anecdotal reports indicate success.

Surgical options to treat PSD are fasciotomy with plantar metatarsal neurectomy and desmoplasty.

For the former procedure, the horse is placed under general anesthesia, a four-centimeter incision is made adjacent to the lateral border of the superficial digital flexor tendon (starting at the level of the tarsometatarsal joint and extending distally), and a three-centimeter piece of the deep branch of the lateral plantar nerve is removed. The surgeon then performs a fasciotomy of the deep laminar metatarsal fascia, the covering of the ligament, to remove pressure. Nineteen of 20 horses that underwent this procedure returned to their previous level of exercise with only two horses experiencing a recurrence of PSD.

Desmoplasty is performed on an anesthetized horse using a tendon knife. To perform desmoplasty, the deep laminar metatarsal fascia has to be perforated, in effect performing a much smaller, more focal fasciotomy. Of the horses treated with this procedure, 85% returned to full work after surgery and rehabilitation.