Is there still a role for surgery?

Yes, surgical management continues to play an important role in the management of all horses with injuries to the superficial digital flexor tendon (SDFT), in both racehorses and sports horses. Intralesional therapy has certainly progressed and there are numerous options for augmenting repair of damaged SDFT. Regenerative therapy continues to improve and with additional experience healing of SDFT using this approach will likely play an important role in management, singularly or in combination with other forms of management, including surgery. The BEST approach is likely the use of combination therapy, including an intralesional option (injection or surgery, or both), a surgical procedure (superior check desmotomy [SCD] alone or in addition to other surgical procedures), rigorously controlled post-injury exercise (see below, without turn out exercise), and careful monitoring of tendon health when the horse returns to training/performance. Surgical management of horses with SDF tendonitis/tendonopathy satisfies many of the time-honored principles used in tendon healing. Superior check desmotomy increases the bone-ligament-tendon-bone interface length, which protects the healed tendon likely harboring an inelastic scar from incomplete or inadequate repair. While regenerative approaches are being used and continuously refined I am not convinced healing is occurring without scar tissue formation, given recurrence of injury in many horses undergoing this therapeutic option. Carpal retinaculotomy (incising the carpal retinaculum, both outer and inner lamina, in horses with proximally located SDFT lesions), annular desmotomy (AD, severing the annular ligament in the distal metacarpal/palmar fetlock regions), and metacarpal fasciotomy (severing the dense metacarpal fascia in the region of SDFT enlargement) all improve gliding function, a time-honored theorem used to manage all tendon injuries.

Superficial Digital Flexor Tendonitis

Tendonitis of the SDFT is a common and debilitating injury in the Thoroughbred (TB) and Standardbred (STB) racehorse, and for that matter in other types of racehorses and upper level sport horses; recurrence is common despite aggressive management and ultrasonographic evidence of adequate healing. CONTROLLED EXERCISE WITHOUT TURN OUT may be the most important component in management coupled with a graded return to training and racing and use of frequent clinical and ultrasonographic examinations. In the STB racehorse tendonitis of the SDFT is not as common as in TBs but can be career limiting in young stakes caliber horses and occurs most commonly in pacers. Surgical management using desmotomy of the assessory ligament of the SDFT (superior check desmotomy) alone or in combination with annular desmotomy is the treatment of choice.

Tendonitis of the SDFT is not nearly as common in sport horses as it is in racehorses or event horses. While tendonitis in the mid-metacarpal region is most common lesions involving the proximal metacarpal region can be problematic. Tendonitis in this region can be difficult to diagnose since swelling is easily missed unless the limb is carefully palpated. Likewise, diagnostic analgesia may be difficult since the lesion is proximal in the metacarpal region and may involve the carpal sheath, so high palmar or other sub-carpal blocks may not provide
analgesia. In some horses carpal tenosynovitis is present; in others there may be extensive swelling of the SDFT from the proximal metacarpal region to the annular ligament. Inexplicable severe tendonitis of the SDFT is seen in middle aged to old horses; horses are often turned out when clinical signs develop.

Prognosis depends on the level and extent of injury as well as the horse’s age. Old horses with severe tendonitis have a poor prognosis. Numerous modalities and methods have been advocated recently, using both reparative and regenerative healing principle. Intra-lesional injections with stem cells (bone marrow derived), A-cell®, growth factors, platelet rich plasma and bone marrow, use of shock wave therapy and combinations of these approaches are currently being used. I have used liquid bone marrow injections in numerous horses, but have largely discontinued this approach since tendons appear clinically “active” for longer than with superior check desmotomy alone. I have used cultured, bone marrow derived stem cells in several horses to date, and remain unconvinced of efficacy. I still prefer surgical management using SCD, in combination with other procedures. Prognosis for sport horses with tendonitis of the SDFT is somewhere in between that for the TB racehorse (guarded to poor prognosis) and the STB racehorse (good prognosis). SCD combined with fasciotomy and desmotomy of the carpal retinaculum (carpal retinaculotomy) and/or AD are recommended. In a limited number of older field hunters, jumpers and STB racehorses all 3 surgical procedures have been used successfully.

SCD can be performed using a medial approach and conventional surgical techniques (flexor carpi radialis transthecal approach) or by carpal tenoscopy. I still prefer the conventional approach since it allows easy, complete transaction of the entire ligament and ability to avoid hemorrhage from the nutrient vessel or control hemorrhage if the vessel is inadvertently severed (vessel can be properly ligated). I have heard colleagues complain of undue complications with conventional surgery but serious complications are rare, and frankly overrated. The horse is placed in lateral recumbency with the unaffected limb uppermost and repositioned if the procedure is done bilaterally. The procedure can and often is combined with annular desmotomy if tendonitis involves the distal metacarpal region. I avoid tendon splitting (tenoplasty) procedures if possible, particularly in STB racehorses, but have had my absolute best results in the TB racehorse using superior check desmotomy in combination with tenoplasty. If done, I prefer to perform tenoplasty using a double-edge tenotome.

Carpal retinaculotomy can be performed using a medial approach with conventional surgical techniques. I still prefer this approach although recognize others prefer at tenoscopic approach. Importantly, both the inner and outer laminae of the carpal retinaculum must be cut to provide the necessary decompression of the swollen, injured SDFT. Proximal metacarpal fasciotomy is performed by extending the incision through the thick metacarpal fascia distally, to the distal extent of the lesion.

*Modified from Ross MW, *Proceedings*, South African Equine Veterinary Association Meeting, George, SA, 2010*