**What is Superior check desmotomy?**

It is a procedure for the correction/management of superficial digital flexor tendinitis or flexture deformities, usually in the fetlock in the horse.

1. **Tendinitis** of the SDFT is the most common tendon injury in the sport horse, and it occurs most frequently in racehorses. Can be due to:

* Direct trauma
* Secondary to peritendinous injury caused by encircling bandages (bandage bows
* Overload injury during exercise, which leads to tendon fiber disruption and swelling (bowed tendon)
* Vascular and conformational factors such as long pasterns, abnormally low hoof angle.
* Ischemia or hypoxia during maximal loading

1. **Flexor tendon disorders/flexture deformities** are associated with postural and foot changes, lameness, and debility. They may be congenital or acquired at an older age. Chronic pain is the most common cause of acquired tendon contracture as it induces reflex muscle contraction with shortening of the flexor musculotendinous units eg. Seen with knuckling in of the fetlock or occasionally the pastern joint.

The SDFT heals with scar tissue formation within and external to the tendon. Inelastic scars within the tendon and peritendinous adhesions predispose the tendon to recurrent damage and reduce gliding function. Inelastic scar tissue reduces the elastic limit of healed tendon. Surgical procedures increasing the bone-ligament–tendon-bone length provide improved elastic limit after injury.

**Pre- Op considerations:**

* To ensure a better prognosis, delaying of cross-linking of randomly arranged collagen fibers by the administration of betaaminoproprionitrile fumarate(BAPN) and promoting later cross-linking of parallel fibers & improving gliding fuction should be done as quickly as possible.
* Horses with recurrent diffuse tendinitis, severe diffuse tendinitis, and lesions involving 10–15% of the cross-sectional area of the tendon should be admitted for surgery. The procedure should be done as early as possible after injury, to avoid inflammation, hemorrhage & further damage.
* Before surgery or after injury the horse should be stall-rested, and the swelling and inflammation treated aggressively with cold packs and systemic anti-inflammatory agents. Some degree of support or immobilization should be used, depending on the amount of damage to the tendon.

**Surgery Procedure.**

* The surgical procedure is performed under general anaesthesia using a medial approach, with the horse in lateral recumbency without tourniquet application, and the leg in down, dorsal recumbency with the leg suspended. The leg is clipped from midradius to midmetacarpus and surgically prepped.
* The horse is then repositioned in the opposite recumbency if the surgery is to be performed bilaterally. The initial incision is made directly over or just cranial to the cephalic vein, and the vein is carefully dissected from the underlying antebrachial fascia and retracted caudally. This approach is less vascular than the caudal approach.
* **Intra operatively, the superior check ligament must be severed completely** because incomplete division does not allow immediate transfer of load to the muscle and would promote faster healing of the structure after surgery, therefore, it necessary to carefully dissect the proximal fibers of the ligament from the nutrient artery and vein. The carpal canal is penetrated, because the superior check ligament is attached to this structure distally. A small portion of the palmar carpal retinaculum may also incised at the distal aspect of the incision, a procedure that is often accompanied by marked relaxation or release of the SDFT.

**Why do this surgery?**

Originally, SCD was thought to reduce tendon strain and the the risk of recurrence of tendinitis. If a gap remained in the check ligament after surgery the load usually placed on the check ligament would then be transferred to the superficial flexor muscle. The muscle would stretch and therefore the healed tendon would be protected.

It has also been proposed that the superior check ligament likely heals after transection, but in an elongated fashion, allowing increased length of the bone-ligament–tendon-bone axis rather than a replacement of this loadbearing axis with muscle.

**Post op considerations:**

* Horses should be given 2 weeks of stall confinement, followed by 4 weeks of stall rest with hand walking for 10–15 min, twice daily. Full-limb support bandages are very important as they limit motion and swelling at the surgical site and maintaining support of the affected limb(s).
* Physiotherapy the form of swimming or walking in the jog cart is recommended for an additional 6 weeks.
* Follow-up ultrasound examinations are done at 6 and 12 weeks after surgery.
* Horses are usually then placed into a jogging program for 4 weeks and then into regular training. Time to first start in STB racehorses is approximately 8 months after surgery, assuming the surgery was done soon after injury.
* Turn-out is not recommended in the first 3 months because exercise is uncontrolled and recurrence of tendinitis is possible. Controlled exercise programs is useful to allow an increased loading of the healing tendon, promote collagen cross-linking without excessive loads. Uncontrolled exercise such as turn-out early after injury or early return to rigorous training is likely to cause excessive loads on damaged or weakened tendons.
* 8 weekly intramuscular injections of polysulfated glycosaminoglycans after surgery can be done although controversial due to its possible hemorrhagic risks.
* Phenylbutazone(anti-inflammatory) is recommended at a dose of 4.4 mg/kg, IV or PO, twice daily for a 10–14 days after surgery, and it appears to be useful in reducing edema and pain at the surgical site and the original tendon injury.



