Long-Term Prognosis of Complete Rupture of the Superficial Digital Flexor Tendon in 25 Horses – A Retrospective Study

T. Stäubli[1], F. Theiss[1], A. Bischofberger[2]

[1]Equine Hospital, Vetsuisse-Faculty, University of Zürich, Switzerland; [2]Clinic for Diagnostic Imaging, Vetsuisse-Faculty, University of Zürich, Switzerland.

Langzeitprognose bei einer vollständigen Ruptur der oberflächlichen Beugesehne bei 25 Pferden – Eine retrospektive Studie

Insgesamt wurden 48 Pferde mit einer einseitigen (n = 44) oder beidseitigen (n = 4) durch Überlastung verursachten vollständigen Ruptur der oberflächlichen Beugesehne (OBS) der Vordergliedmassen retrospektiv analysiert. Eine Langzeitstudie von 25 Pferden erfolgte durchschnittlich 5,9 Jahre nach der Verletzung mittels telefonischer Befragung der Besitzer.

Die mit einer OBS-Tendinitis assoziierte Mortalitätsrate lag bei der Langzeitstudie bei 12 % (3 von 25 Pferden). Insgesamt zeigten 76,0 % der Pferde (19 von 25) kein erneutes Auftreten einer OBS-Tendinitis, während 24,0 % (6 von 25) mindestens eine weitere Tendinitis erlebten. Diese Ergebnisse unterstreichen die Bedeutung für die Tierärzteschaft sowie die Besitzerinnen und Besitzer, nach überlastungsbedingten vollständigen Rupturen der OBS wachsam gegenüber möglichen Rückfällen zu bleiben.

Die Ergebnisse dieser Studie zeigen, dass eine Behandlung von Pferden mit vollständiger Ruptur der OBS gerechtfertigt ist, da die Pferde eine gute Prognose haben, entweder wieder leichte gerittene Arbeit aufzunehmen (81,0 %) oder zumindest ein lahmheitsfreies Weidepferd zu werden (14,0 %) – wenngleich die Rehabilitation in den meisten Fällen mindestens ein Jahr dauerte.

Schlüsselwörter: Pferd, Prognose, Ruptur, oberflächliche Beugesehne, Tendinopathie

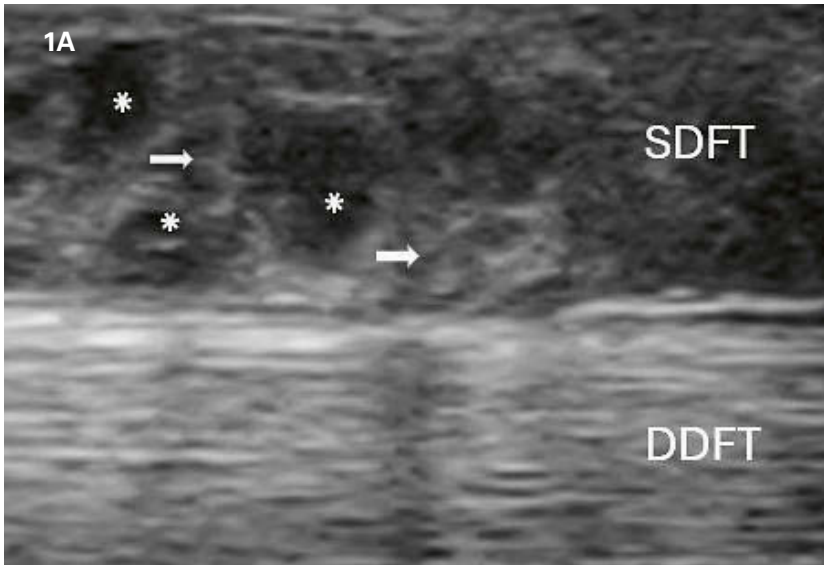
Summary

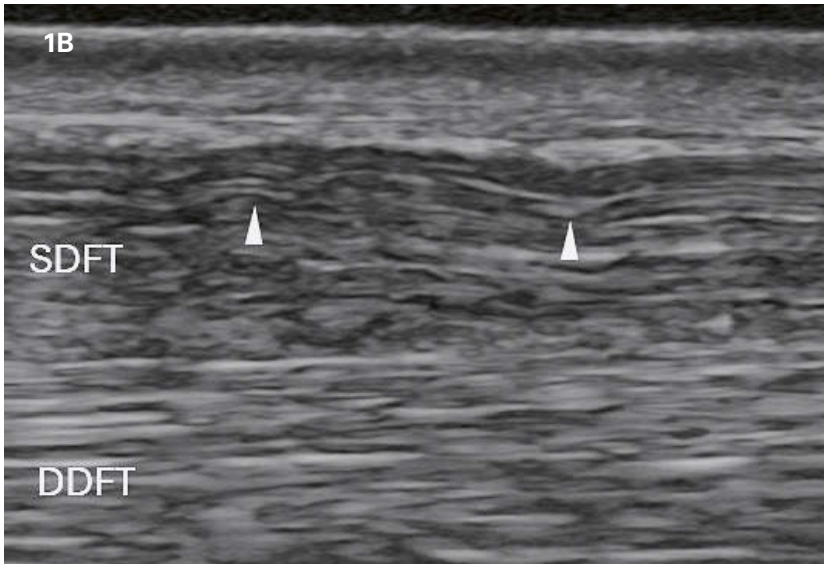
A total of 48 horses with unilateral (n = 44) or bilateral (n = 4) overstrain-induced complete rupture of the superficial digital flexor tendon (SDFT) in the forelimbs were retrospectively analysed. A telephone questionnaire, carried out an average of 5,9 years post-injury, served as a long-term follow-up in 25 horses. The mortality rate associated with SDF tendonitis was 12,0 % (3/25). Superficial digital flexor tendonitis did not recur in 76,0 % (19/25) of the horses, but at least one subsequent episode occurred in 24,0 % (6/25). The results of this study indicate that it is reasonable to treat horses with complete rupture of the SDFT; the prognosis for return to light ridden exercise (81,0 %) or achieving pasture soundness (14,0 %) is good. However, the rehabilitation period is long, a minimum of one year in most cases. This study also highlights the importance of monitoring for recurrence after the initial episode of overstrain-induced complete rupture of the SDFT.

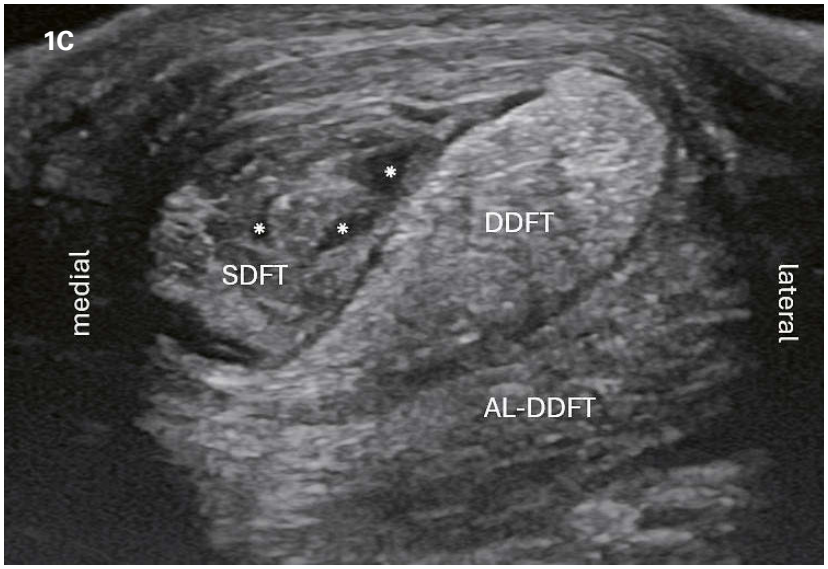
Keywords: horse, outcome, rupture, superficial digital flexor tendon, tendinopathy

https://doi.org/10.17236/sat00468

Eingereicht: 17.06.2025
Angenommen: 15.10.2025







Introduction

Tendon injuries can be caused by percutaneous trauma or overstrain. The latter may be the result of sudden overload or possibly a degenerative process.[1,2,24] Complete rupture of the superficial digital flexor tendon (SDFT) is usually attributable to percutaneous lacerations.[8, 12,18] Rupture of the SDFT was described in a postmortem study[24] and as a sequela of unresponsive digital flexor tendon sheath sepsis.[13] Bilateral rupture of the SDFT was likely attributable to fluoroquinolone-associated tendinopathy.[14] Overstrain was the cause of complete rupture of the SDFT in one mule and 13 horses[19] and of nine other horses.[23] Complete rupture of the SDFT may be can be associated with a dropped fetlock and dorsal subluxation of the distal first phalanx.[18] Although rupture of the SDFT is uncommon, it occurs in eventing horses and geriatric horses allowed to run on pasture,[7] and commonly affects the forelimbs.[1,2,6]

The outcome of horses with SDFT rupture has not been consistently reported, but ranges from euthanasia due to uncontrollable pain and poor prognosis for recovery,[14] to fair for pasture soundness,[23] and favourable for pleasure riding.[19] Overall, little information is available on the progression and outcome of horses with complete rupture of the SDFT (PubMed search September 03, 2025, using keywords outcome, rupture, superficial digital flexor tendon, horse.)

The goal of this retrospective study was to describe the clinical and ultrasonographic findings, and short- and long-term outcomes in horses with overstrain-induced complete rupture of the SDFT. The outcome included rehabilitation time, lameness, return to intended use, recurrent SDF tendonitis, complications, and rupture-specific mortality rate. The data generated are intended to provide a more accurate long-term prognosis for cases of complete SDFT rupture.

Figure 1: Longitudinal (1A, 1B) and transverse (1C) ultrasonographic images of complete rupture of the superficial digital flexor tendon (SDFT).

The longitudinal views show retracted tendon fibres proximal and distal to the rupture site, giving the tendon a characteristic cauliflower-like appearance (white arrows) (1A) or a wave-like pattern where fibres are visible (arrowheads) (1B). Also, anechoic fluid zones within the lesion are visible (asterisks) (1A).

The transverse image (1C) shows medial displacement of the tendon (medial is to the left), a hypoechoic area with complete loss of organized tendon fibres, and anechoic fluid zones (asterisks).

Abbreviations: AL-DDFT = accessory ligament of the deep digital flexor tendon, DDFT = deep digital flexor tendon, SDFT = superficial digital flexor tendon.

Materials and Methods

Medical records of horses with a unilateral or bilateral overstrain-induced complete rupture of the SDFT referred to the Equine Hospital, Vetsuisse Faculty, University of Zurich, Switzerland, from 1993 to 2017, were analysed. Horses with lacerations or other types of wounds over the flexor tendons, fetlock, and/ or carpal canal and those with partial rupture of the SDFT were excluded from the study.

Horses were included in the study if they showed typical ultrasonographic features of a SDFT rupture, as described in detail in literature.[16,22] These included: lesions of the SDFT extending over several centimeters, SDFT enlargement up to three times the normal diameter, a hypoechoic appearance with complete loss of organised tendon fibres, and anechoic fluid zones. Additionally, medial displacement of the tendon within the limb was also observed in some cases. An anechoic region surrounded by a thin echogenic line - representing the paratenon - was often present, along with retracted tendon fibers proximal and distal to the rupture site, giving the tendon a characteristic cauliflower or wave-like pattern appearance. Marked subcutaneous thickening and interspersed tissue strands within hypoechoic material were further indicative features (Figure 1).[16,22]

The medical records were manually reviewed to obtain the following data, when available: signalment, affected forelimb(s), previous use, date of SDFT rupture, lameness at walk, dropped fetlock under full weight bearing, swelling over the flexor tendons, loss of tendon continuity, the rupture site determined via ultrasonography (proximal within the carpal canal or the metacarpal region), and short-term outcome (survival to hospital discharge).

Long-term outcome

A telephone questionnaire was carried out for long-term follow-up (Supplement 1). The 25 owners were asked whether the horse was still alive, and if not, the cause of death and the age at death. Additional information gathered included soundness after rehabilitation, return to intended use, permanent deformity over the flexor tendons, recurrent SDF tendonitis, complications after the rupture, time from sustaining the injury to returning back to use (simplified as «rehabilitation time»), and treatments administered.

Data analysis

A descriptive data analysis was carried out with continuous data presented as mean and standard deviation (SD). The frequencies were reported as absolute values and percentages.

Results

A total of 48 horses, consisting of 35 (72,9 %) geldings, 11 (22,9 %) mares, and two (4,2 %) stallions, met the inclusion criteria. Warmblood horses were the most common breed (72,9 %, 35/48), followed by Arabian horses (8,3 %, 4/48), Thoroughbreds (4,2 %, 2/48), and others (14,6 %, 7/48). The mean age at presentation was 17,3 ± 4 years (range 4 - 24 years).

The right SDFT had ruptured in 47,9 % (23/48) of the horses, the left SDFT in 43,8 % (21/48), and bilateral rupture had occurred in 8,3 % (4/48). A total of 32 horses (66,7 %) had been used for riding, with some also participating in low to moderate levels of show jumping, driving, dressage, and/or endurance competitions. Another two horses had

Table 1: Frequencies of exposure variables at the initial clinical examination (n = 48) and site of rupture on sonograms (n = 52).

Exposure variable	Category	Percentage of horses or limbs (number of horses or limbs)
Lameness at the walk	Yes	66,7 (32/48)
	Unknown	29,2 (14/48)
	No	4,2 (2/48)
Dropped fetlock when weight bearing	Yes	60,4 (29/48)
	No/ Unknown	33,3 (19/48)
Swelling over flexor tendons	Yes	91,7 (44/48)
	No/ Unknown	8,3 (4/48)
Loss of tendon continuity palpable	No/ Unknown	60,4 (29/48)
	Yes	39,6 (19/48)
Site of SDFT rupture on sonograms (n=52)	Within CFTS	55,8 (29/52)
	Metacarpal level	44,2 (23/52)

Abbreviations: CFTS = carpal flexor tendon sheath, SDFT = superficial digital flexor tendon.

been used for racing (4,2 %), dressage (2,1 %), including international competitions, or show jumping (2,1 %), including international competitions. No information on the previous use was available in 12 (25,0 %) horses.

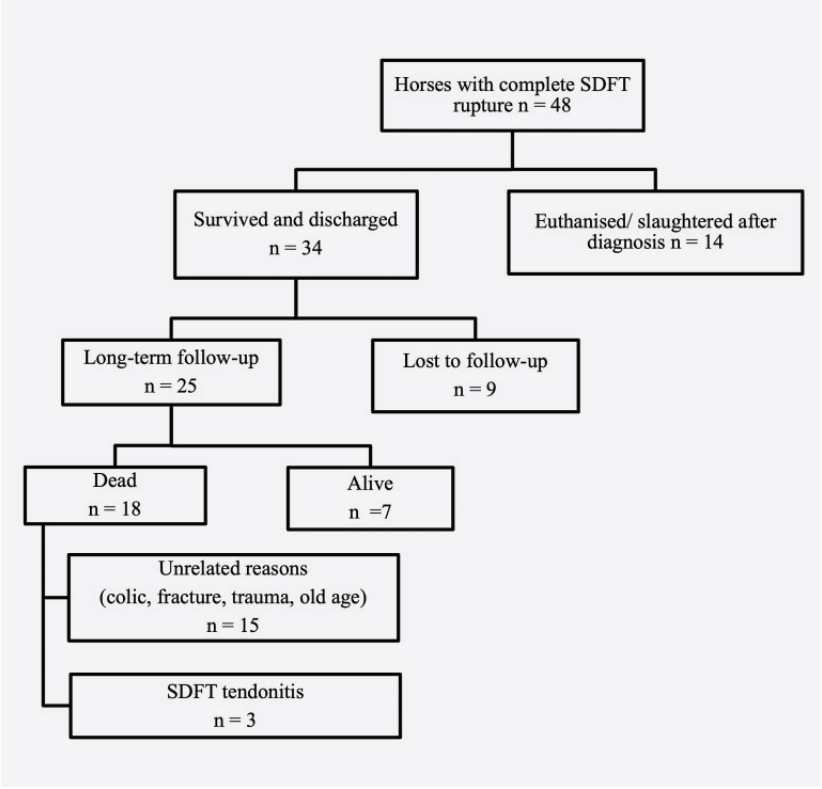


Figure 2: An overview of the outcome of 48 horses with complete rupture of the superficial digital flexor tendon (n = 48). Abbreviation: SDFT = superficial digital flexor tendon.

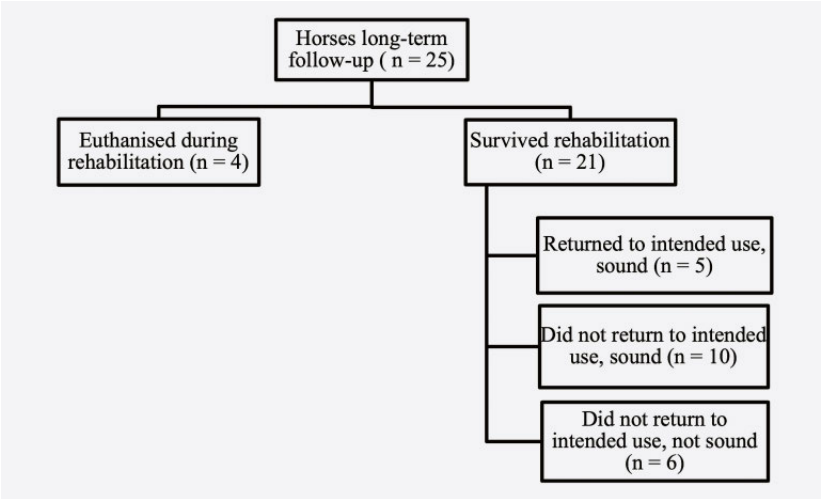


Figure 3: An overview of the use of 25 horses included in the long-term follow-up. Abbreviation: SDFT = superficial digital flexor tendon.

Rupture of the SDFT had occurred in 66,7 % (32/48) of the horses while being ridden, and 25,0 % (12/48) had sustained injuries while on pasture. Information was unavailable for the remaining horses (8,3 %, 4/48). In the 32 horses that had sustained injuries while being ridden, the rupture had occurred either during dressage work or hacking (46,9 %, 15/32), show jumping (46,9 %, 15/32), and racing (6,3 %, 2/32). The clinical findings at initial examination and the rupture site diagnosed via ultrasonography are presented in Table 1. Of the 48 horses, 34 (70,8 %) had survived to hospital discharge (Figure 2). The remaining 14 horses (29,2 %) were euthanised or slaughtered after diagnosis, including one horse with bilateral SDFT rupture.

Long-term follow-up

A telephone questionnaire was used to obtain long-term follow-up data in 25 horses (73,5 %), an average of 5,9 years ± 3,7 (range, 1,4–14 years) after the initial presentation. Nine cases (26,5 %) were lost to follow-up.

Data collected from the 25 cases, including the outcome, are summarised in Figures 2 and 3 and Table 2. Briefly, of the 25 horses, seven (28,0 %) were still alive at the time of the telephone questionnaire, and 18 (72,0 %) were deceased. Telephone interviews were conducted with owners of deceased horses from the time of diagnosis until death (0,5–14 years), and with owners of horses that were still alive from the time of diagnosis until the telephone questionnaire (1,4–10,6 years).

Three horses had been euthanised after recurrence of SDF tendonitis, yielding a long-term mortality rate of 12,0 % (3/25). The remaining horses had been euthanised for reasons unrelated to tendonitis (Table 3). Overall, SDF tendonitis did not recur in 76,0 % (19/25) of the horses, while 24,0 % (6/25) had a subsequent episode (Table 3).

The rehabilitation time was less than five months in one case (4,0 %), approximately six months in another (4,0 %), approximately one year in 10 (40,0 %), greater than one year in nine (36,0 %), and could not be determined because of reinjury or premature euthanasia in four (16,0 %) (Table 3). The latter four horses could therefore not be assigned to the «returned to intended use» or «sound» category because the recovery process was not complete. Thus, 21 horses completed the rehabilitation time. Of those, five (24,0 %) returned to their intended use and were sound, 10 (48,0 %) were sound but did not return to their intended use, and the remaining six (28,0 %) were not sound and did not return to their intended use. Table 3 shows the «type of use after SDFT rupture».

Discussion

This study described the clinical presentation, ultrasonographic findings, and outcome in 25 horses with complete rupture of the SDFT.

Complete rupture of the SDFT in the forelimb predominantly affects middle-aged to older horses,[7] with an age range reported of 15 to 30 years.[19,23] The present study yielded a comparable age distribution, with a mean age of 17,3 ± 4 years at presentation. However, two racehorses, aged four and eight years (horses 14 and 12, respectively), were outliers. The mean age of the study population was only mildly decreased by the inclusion of racehorses (mean age without the two racehorses: 18,2 ± 2 years), which are rarely part of our equine population with rupture of the SDFT. The racehorses were injured while racing, a high-intensity exercise that likely contributed to the early onset of complete SDFT rupture. Age and exercise are risk factors for tendon injury.[15,25] Older horses are more commonly affected by tendon rupture, and thus, age-related tendon degeneration, thought to precede tendon rupture, must be considered in these cases.[1,2,21]

It is described that SDFT lesions are frequently bilateral, with one forelimb more severely affected than the other.[10] In this study, at presentation four horses had bilateral rupture of the SDFT, and one horse also had partial rupture of the SDFT in the contralateral forelimb. The potential for bilateral involvement highlights the importance of a comprehensive clinical assessment, including ultrasonographic examination of both limbs, in all cases suspected of having rupture of the SDFT or tendinopathy.

Prompt medical intervention is crucial for the management of SDF tendinopathy to reduce inflammation, control acute swelling, and prevent further fibres damage or premature formation of fibrous tissue. Treatment includes cooling with ice packs or cold water hydrotherapy,[7] systemic anti-inflammatory drugs, and analgesics.[7,14,19] In horses with SDFT rupture, a soft cast or plastic bandage[7] or splint support[7,14] and stall rest should be used initially, followed by a controlled exercise program.[7,19] Polysulfated glycosaminoglycans, systemic hyaluronan, or injectable autologous biologic therapies, including bone marrow-derived cells, platelet-rich plasma (PRP), and concentrated plasma, are injected in or around the tendon.[7] This is usually done one to two weeks after initial treatment, once the majority of fluid accumulation has resolved. In some cases, desmotomy of the accessory ligament of the SDFT is done.[9,11] Establishing correlations between treatment modalities and outcomes was not possible in the present study because therapeutic approaches varied considerably over the years and among individual horses and clinicians.

Table 2: An overview of the long-term outcome of 25 horses with rupture of the SDFT.

Long-term outcome	Category	Percentage of horses (number of horses)
Complications reported after SDFT rupture	No	68,0 (17/25)
	Yes	32,0 (8/25)
	Colic during stall rest	8,0 (2/25)
	Severe SDF tendonitis contralateral forelimb 2y after initial rupture	4,0 (1/25)
	Severe SDF tendonitis contralateral forelimb 1,5y after initial rupture	4,0 (1/25)
	Contraction of SDFT	4,0 (1/25)
	Desmitis of both branches of the SL and ALDDFT, same forelimb as initial rupture	4,0 (1/25)
	Desmopathy of SL lateral branch, same forelimb as initial rupture	4,0 (1/25)
	PSD contralateral forelimb	4,0 (1/25)
	Desmitis ALDDFT contralateral forelimb	4,0 (1/25)

Abbreviations: ALDDFT = accessory ligament of the deep digital flexor tendon, PSD = proximal suspensory desmopathy, SDFT = superficial digital flexor tendon, SL = suspensory ligament, Y = years.

The variation in rehabilitation time was large, ranging from less than five months to 60 months. Client education regarding the slow healing process of tendon tissues possibly led to the adoption of cautious rehabilitation protocols. Additionally, the pressure for horses to return to their intended use was low, and owners may have had low expectations for complete athletic recovery. Smith and Mair (2007) found that horses with rupture of the SDFT returned to light ridden exercise six months post injury, with a gradual return to their previous level of activity.[19] The most objective method for assessing whether a horse has returned to its intended use or is performing at the same level as before the

Table 3: An overview of 25 horses with rupture of the SDFT included in the long-term follow-up and sorted by date of presentation.

No.	Sex	Breed	Age at SDFT rupture (Y)	Type of use before SDFT rupture	Affected limb(s)	Recurrent SDF tendonitis	Complications/ injuries	Sound	Returned to intended use	Type of use after SDFT rupture	Rehabilitation duration	Age at death (years after diagnosis) or age if still living	Reason for death/ eutha
1	MC	WB	16	Pleasure	LF	No	No	No	No	LRE	12 M	24 (8)	Trauma
2	MC	WB	17	Pleasure	LF	No	No	Yes	Yes	LRE	12 M	25 (8)	Old age
3	MC	WB	18	Pleasure	RF	No	No	No	No	LRE	6 M	19 (1)	Fracture
4	F	WB	19	Pleasure	RF	After 2,5Y and 3Y	Desmitis both branches SL and ALDDFT RF	Yes	No	Pasture	60 M	28 (9)	Old age
5	MC	WB	16	Pleasure	LF	No	No	Yes	No	LRE	18 M	19 (3)	Old age, melanomas
6	MC	WB	15	Dressage	RF	No	PSD LF	No	No	LRE	12 M	22 (7)	Old age
7	MC	WB	17	Pleasure	RF	No	Colic stall rest	Yes	No	Pasture	36 M	29 (12)	Old age
8	MC	Other	23	Pleasure	RF	No	No	Yes	Yes	LRE	12 M	32 (9)	Old age
9	F	WB	20	Pleasure	RF	After 4Y RF	Severe SDF tendonitis LF 2Y later	Eutha	Eutha	Eutha	Eutha	24 (4)	Recurrent SDF tendonits RF
10	MC	WB	18	Pleasure	RF	No	No	Yes	No	LRE	12 M	32 (14)	Old age
11	MC	Other	19	Pleasure	LF	No	Severe SDF tendonitis RF 1,5Y later	Eutha	Eutha	Eutha	Eutha	21 (2)	Tendonitis RF
12	F	TB	8	Racing	RF	No	No	Yes	No	LRE	24 M	19	Alive
13	MC	WB	23	Pleasure	RF	After 1,5Y	Colic, contraction of the SDFT	No	No	Pasture	12 M	27 (4)	Colic
14	F	TB	4	Racing	BF	No	No	Yes	No	Pasture	12 M	14	Alive
15	MC	WB	15	Pleasure	BF	After 9M RF	No	Yes	No	LRE	18 M	23 (8)	Old age
16	F	WB	15	Pleasure	LF	No	No	No	No	LRE	24 M	21 (6)	Old age
17	F	Other	24	Pleasure	LF	No	Desmopathy lateral branch SL LF	Yes	Yes	LRE	24 M	30	Alive
18	MC	Other	22	Pleasure	LF	No	No	Yes	No	LRE	12 M	31 (9)	Old age
19	F	WB	20	Pleasure	LF	No	No	Eutha	Eutha	Eutha	Eutha	20 (0,5)	Fracture
20	F	Other	17	Pleasure	RF	No	No	Yes	No	LRE	12 M	20 (3)	Colic
21	MC	WB	16	Pleasure	FB	No	No	Yes	Yes	LRE	12 M	19	Alive
22	MC	WB	20	Pleasure	RF	No	No	Yes	No	LRE	18 M	23	Alive
23	MC	WB	16	Pleasure	RF	After 1Y RF	Desmitis ALDDFT LF	Eutha	Eutha	Eutha	Eutha	17 (1)	Recurrent SDF tendonits RF
24	MC	WB	15	Pleasure	LF	No	No	No	No	LRE	18 M	16	Alive
25	MC	Other	15	Pleasure	LF	No	No	Yes	Yes	LRE	< 5 M	19	Alive

ALDDFT = accessory ligament of the deep digital flexor tendon, BF = both forelimbs, eutha = euthanised during rehabilitation, F = female, LF = Left forelimb, LRE = light ridden exercise, M = month, MC = male castrated, PSD = proximal suspensory desmopathy, RF = Right forelimb, SDFT = superficial digital flexor tendon, SL = suspensory ligament, TB = Thoroughbred, WB = Warmblood, Y = years.

injury is to examine rankings or earnings. However, this was not feasible in our study population; most horses were used for low- to medium-level activities, such as show jumping, dressage, endurance, driving, and/or pleasure riding, without competing. Justified concerns about the possibility for a potential recurrence of SDF tendinopathy the advanced age of many horses, and the owners' desire to maintain optimal health for their horses may have contributed to lowered expectations regarding their athletic performance. As a result, future long-term studies may show that the likelihood of horses returning to their pre-injury level of use is higher than what we observed. Most of the horses that completed rehabilitation returned to light ridden exercise (81,0 %) or achieved pasture soundness (14,0 %). Two horses that were sound after completing an extended rehabilitation period did not return to their intended level of use. However, they were occasionally jumped, suggesting that more strenuous exercise can be achieved following rupture of the SDFT.

The long-term follow-up in the present study covered an extended period which has not been described in the literature. This allowed for an exceptionally long window to determine whether SDF tendinopathies including SDF tendinopathies in the same or other forelimb or other potentially related conditions, recurred years after the initial rupture. However, this also introduced the possibility of recall bias and misclassification of critical clinical details, as only the owners were interviewed about soundness, presence of contracture, or secondary tendon injuries.

Fortunately, only three of the horses discharged from our clinic were euthanised because of recurrent SDF tendonitis. The extended follow-up period showed that recurrent SDF tendonitis and other complications, such as severe tendonitis in the contralateral forelimb, can occur years after the initial injury. These issues may be overlooked when the follow-up period is not long enough. The rate of recurrent SDF tendinopathies in the present study was 24 % (6/25), which was higher than 11,1 % (1/9) reported by Smith and Mair (2007). This discrepancy may be attributed to differences in sample size, the longer follow-up period in this study, the varying athletic activities of the horses, the temperament of the horses in relation to successful rehabilitation, and the level of aftercare provided by the owners. While there were no other comparable studies on recurrent SDF tendonitis rates following complete SDFT rupture except Smith and Mair (2007),[19] a review of studies with SDF tendonitis cases, including those on racehorses, shows a wide range of 9,0 to 66,7 %.[3,4,5,17]

The decision to euthanise horses diagnosed with complete rupture of the SDFT was influenced by factors such as treatment costs, the anticipated length of rehabilitation, and/or the poor prognosis for future athletic performance. Therefore, the decision to forgo treatment was not based on the horse's clinical presentation but rather on the expectation of prolonged recovery and concerns regarding the potential quality of life and prognosis. Only one horse was euthanised because of severe pain shortly after the initiation of treatment.

We concluded that the prognosis of rupture of the SDFT was generally favorable, with horses returning to light ridden exercise after treatment, which is consistent with the findings of other studies.[19,23] Many factors influencing prognosis, such as age, level of exercise, financial considerations, and the quality of treatment and rehabilitation, are difficult to compare directly. However, our study shows that horses with overstrain-induced complete rupture of the SDFT can return to some level of exercise or achieve pasture soundness when provided adequate time for recovery.

As a retrospective study, this work was subject to several inherent limitations. Data were extracted from medical records, some of which were incomplete or lacked critical information. Follow-up data, including assessments of lameness and ultrasonographic findings, were unavailable for most cases and, therefore, could not be included in our analysis. Long-term follow-up was based on owner-reported outcomes, often obtained after a significant time interval, introducing the potential for information and recall bias. Soundness was assessed by the owners rather than veterinarians, which may have affected the objectivity of the evaluations; the classification of soundness, for example, may have differed between owners and veterinarians. Furthermore, lameness may have been associated with other underlying conditions, especially considering the advanced age of many horses. Nine cases were lost to follow-up, which may have introduced selection bias.

Conclusion

Treatment of horses with complete rupture of the SDFT is recommended in most cases because the prognosis for return to soundness and light ridden exercise is favourable, and the owner's expectation of future athletic performance is often low. Owners should be informed that the rehabilitation period typically lasts at least one year, and recurrent SDFT tendinitis affecting the same or contralateral limb, occurs in approximately 24,0 % of horses, even years after the initial injury.

Authors' declaration of interests

No conflicts of interest to declare.

Ethical animal research

Not applicable: retrospective study.

Source of funding

No external funding was acquired.

Acknowledgements

The authors thank Dr. Marco Bryner for his help with the data collection and all the horse owners who participated in the follow-up interviews.

Authorship

All authors have made substantial contributions to the design and execution of the study, data analysis and interpretation, and manuscript preparation. All authors have given their final approval of the manuscript.

Pronostic à long terme de la rupture complète du tendon fléchisseur superficiel du doigt chez 25 chevaux – Une étude rétrospective

Quarante-huit chevaux au total, présentant une rupture complète unilatérale (n = 44) ou bilatérale (n = 4) du tendon fléchisseur superficiel du doigt (TFSD) des membres antérieurs, induite par une sollicitation excessive, ont été analysés rétrospectivement. Un questionnaire téléphonique, réalisé en moyenne 5,9 ans après la blessure, a servi de suivi à long terme chez 25 chevaux. Le taux de mortalité associé à la tendinite du TFS était de 12,0 % (3/25). La tendinite du tendon fléchisseur superficiel du doigt n'est pas réapparue chez 76,0 % (19/25) des chevaux, mais au moins un épisode ultérieur s'est produit chez 24,0 % (6/25) d'entre eux. Les résultats de cette étude indiquent qu'il est raisonnable de traiter les chevaux présentant une rupture complète du TDFS ; le pronostic de retour à un exercice léger (81,0 %) ou à une bonne santé au pâturage (14,0 %) est bon. Cependant, la période de rééducation est longue, au moins un an dans la plupart des cas. Cette étude souligne également l'importance de surveiller la récurrence après le premier épisode de rupture complète du TFSD induite par un effort excessif.

Mots clés: cheval, résultat, rupture, tendon fléchisseur superficiel du doigt, tendinopathie

Prognosi a lungo termine della rottura completa del tendine flessore digitale superficiale in 25 cavalli: uno studio retrospettivo

Sono stati analizzati retrospettivamente 48 cavalli affetti da rottura completa, unilaterale (n = 44) o bilaterale (n = 4), del tendine flessore digitale superficiale (SDFT) degli arti anteriori, insorta in seguito a sovraccarico funzionale. Un follow-up a lungo termine è stato effettuato mediante questionario telefonico, in 25 cavalli in media 5,9 anni dopo l'evento traumatico.

Il tasso di mortalità correlato alla tendinite del SDFT è risultato pari al 12,0 % (3/25). Nel 76,0 % dei casi (19/25) non si è osservata recidiva della tendinite, mentre il 24,0 % (6/25) ha presentato almeno un nuovo episodio. I risultati ottenuti indicano che il trattamento dei cavalli con rottura completa del SDFT può essere considerato giustificato: la prognosi per il ritorno a un'attività montata leggera è buona (81,0 %), così come quella per il raggiungimento di una condizione di benessere al pascolo (14,0 %). Tuttavia, il periodo di riabilitazione risulta molto lungo, con una durata minima di circa un anno nella maggior parte dei casi.

Lo studio sottolinea, inoltre, l'importanza di un attento monitoraggio post-terapeutico per individuare tempestivamente eventuali recidive in seguito a episodi di rottura completa del SDFT dovuti a sovraccarico.

Parole chiave: cavallo, prognosi, rottura, tendine flessore digitale superficiale, tendinopatia

Literaturnachweis

[1] Auer JA, Stick JA, editors (2012) Equine Surgery, 4th ed, Elsevier, Missouri, 1157–1179.

[2] Birch HL (1998) Macroscopic 'degeneration' of equine superficial digital flexor tendon is accompanied by a change in extracellular matrix composition. Equine Veterinary Journal, 30(6), 534–539, DOI 10.1111/j.2042-3306.1998.tb04530.x

[3] Coudry V, Dupays AG, Carnicer D, Jacquet S, Bertoni L, Crevier-Denoix N, Desquilbet L, Kichenin K, Barritault D, Denoix JM (2014) Long-Term Follow-up of Superficial Digital Flexor Tendonitis Treated by a Single Intralesional Injection of a Regeneraging Agent in 51 Horses. Journal of Equine Veterinary Science 34(11–12), 1357–1360, DOI 10.1016/j.jevs.2014.09.014

[4] Dyson SJ (1997) Treatment of superficial digital flexor tendinitis: a comparison of conservative management, sodium hyaluronate, and glycosaminoglycan polysulfate. Proceedings of the Annual Convention of the AAEP 1997, 297–300

[5] Dyson SJ (2004) Medical management of superficial digital flexor tendonitis: a comparative study in 219 horses (1992 - 2000). Equine Veterinary Journal 36(5), 415–419, DOI 10.2746/0425164044868422

[6] Dyson SJ, Ross MW (2011) Diagnosis and Management of Lameness in the Horse, 2nd ed, Elsevier/ Saunders, St. Louis, 706–726

[7] Eggleston RB, Baxter GM, Belknap J, Parks A, Dern K, Watts AE (2020) Adams and Stashak's Lameness in Horses, 7th ed, Wiley John + Sons, New Jersey, 439–595

[8] Foland JW, Trotter GW, Stashak TS, McIlwraith CW, Turner AS, Aanes WA (1991) Traumatic injuries involving tendons of the distal limbs in horses: a retrospective study of 55 cases. Equine Veterinary Journal 23(6), 422–425, DOI 10.1111/j.2042-3306.1991.tb03754.x

[9] Fulton IC, MacLean AA, O'Rielly JL, Church S (1994) Superior check ligament desmotomy for treatment of superficial digital flexor tendonitis in thoroughbred and standardbred horses. Aust Vet J. 71(8), 233–235, DOI 10.1111/j.1751-0813.1994.tb03417.x

[10] Hinchcliff KW, Kanpes AJ, Geor RJ (2014) Equine Sports Medicine and Surgery, 2nd ed, Sounders, Philadelphia, Pennsylvania, 167–188

[11] Hu AJ, Bramlage LR (2014) Racing performance of Thoroughbreds with superficial digital flexor tendonitis treated with desmotomy of the accessory ligament of the superficial digital flexor tendon: 332 cases (1989–2003). J Am Vet Med Assoc. 244(12), 1441–1448, DOI 10.2460/javma.244.12.1441

[12] Jordana M, Wilderjans H, Boswell J, Dewulf J, Smith RKW, Martens A (2011) Outcome after Lacerations of the Superficial and Deep Digital Flexor Tendons, Suspensory Ligament and/or Distal Sesamoidean Ligaments in 106 Horses. Veterinary Surgery 40(3), 277–283, DOI 10.1111/j.1532-950X.2011.00814.x

[13] Kidd JA, Voute LC, Hewetson M (2004) Rupture of the flexor tendons of a horse secondary to a non-responsive digital sheath sepsis. Veterinary record 155(7), 201–204, DOI 10.1136/vr.155.7.201

[14] Levine RS, Pacheco A, Chope K, García López J, Gates S (2012) What Is Your Diagnosis? Journal of the American Veterinary Medical Association 241(12), 1563–1564, DOI 10.2460/javma.241.12.1563

[15] Perkins N, Reid S, Morris R (2005) Risk factors for injury to the superficial digital flexor tendon and suspensory apparatus in Thoroughbred racehorses in New Zealand. New Zealand Veterinary Journal 53(3), 184–192, DOI 10.1080/00480169.2005.36503

[16] Reef VB (1998) Equine diagnostic ultrasound, W.B. Saunders, Philadelphia, 80–90

[17] Ricco S, Renzi S, Del Bue M, Conti V, Merli E, Ramoni R, Lucarelli E, Gnudi G, Ferrari M, Grolli S (2013) Allogeneic adipose tissue-derived mesenchymal stem cells in combination with platelet rich plasma are safe and effective in the therapy of superficial digital flexor tendonitis in the horse. International journal of immunopathology and pharmacology 26(1), 61–68, DOI 10.1177/03946320130260S108

[18] Ross MW, Dyson SJ, editors (2011) Diagnosis and management of lameness in the horse, 2nd ed, Elsevier/ Saunders, Missouri, 806–813

[19] Smith LJ, Mair TS (2007) Rupture of the superficial flexor tendon in the forelimb in aged horses: a report of nine cases. Equine Vet Education 19(4), 183–186, DOI 10.2746/095777307X188323

[20] Smith RKW (2008) Mesenchymal stem cell therapy for equine tendinopathy. Disability and Rehabilitation 30 (20–22),1752–1758, DOI 10.1080/09638280701788241

[21] Smith RKW, Birch HL, Goodman S, Heinegård D, Goodship AE (2002) The influence of ageing and exercise on tendon growth and degeneration—hypotheses for the initiation and prevention of strain-induced tendinopathies. Comparative biochemistry and physiology Part A, Molecular & integrative physiology 133(4), 1039–1050, DOI 10.1016/s1095-6433(02)00148-4

[22] Smith RKW, Cauvin ERJ (2022) Ultrasonography of the Metacarpus and Metatarsus. Atlas of Equine Ultrasonography, John Wiley & Sons Inc, New York, 85–127

[23] Vaughan B, Whitcomb MB, Galuppo L, Shields G (2014) Spontaneous rupture of the proximal superficial digital flexor tendon: a clinical syndrome in aged equids. Proceedings of the 60th Annual Convention of the American Association of Equine Practitioners, Salt Lake City, Utah, USA, 257

[24] Webbon PM (1977) A Post Mortem Study of Equine Digital Flexor Tendons. Equine Veterinary Journal 9(2), 61–67, DOI 10.1111/j.2042-3306.1977.tb03981.x

[25] Williams, R. B., L. S. Harkins, C. J. Hammond & J. L. N. Wood (2001) Racehorse injuries, clinical problems and fatalities recorded on British racecourses from flat racing and National Hunt racing during 1996, 1997 and 1998. Equine Veterinary Journal, 33, 478–486.

Korrespondenzadresse

Tamara Stäubli
Equine Hospital, Vetsuisse-Faculty, University of Zürich,
Winterthurerstrasse 260,
CH-8057 Zürich
E-Mail: tstaeubli@vetclinics.uzh.ch

Long-Term Prognosis of Complete Rupture of the Superficial Digital Flexor Tendon in 25 Horses – A Retrospective Study

T. Stäubli, F. Theiss, A. Bischofberger