

Deep Digital Flexor Tenotomy as a Treatment for Chronic Laminitis in Horses: 37 Cases

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Deep digital flexor tenotomy should be considered as a therapeutic option in horses with chronic laminitis. Authors' address: Texas Veterinary Medical Center, College of Veterinary Medicine, Texas A&M University, College Station, TX 77843-4475. © 1998 AAEP.

1. Introduction

Laminitis often progresses, despite intensive medical therapy.¹ In these instances, deep digital flexor (DDF) tenotomy has been proposed to alleviate pain and halt the progression of the disease.^{2,3} The literature, however, has yielded conflicting results regarding the outcome of this procedure, and to our knowledge long-term follow-up has never been reported.⁴ The purpose of this study was to define the risk factors associated with the success of this procedure and to determine the outcome for laminitic horses treated with DDF tenotomy.

2. Materials and Methods

The records of horses that received a DDF tenotomy between January 1, 1988 and July 1, 1997 were reviewed. Signalment, duration of lameness, Obel grade of lameness at presentation, inciting cause, and surgical site were obtained. Radiographs taken during the perioperative period were retrieved. Long-term follow-up information was obtained by telephone conversations with owners and referring veterinarians. When performed at the midcannon level (31 horses), the procedure was done with the horse in a standing position and with the use of local

or regional anesthesia, while general anesthesia was utilized when the tendon was transected at the midpastern (six horses).

Data analysis: The cumulative proportions of surviving horses were recorded at 6 months and 2 years postoperatively. The effect of Obel grade on survival was evaluated by chi-squared analysis. The effect of body weight on survival was evaluated by an analysis of variance. Horses were divided into three groups based on the degree of rotation.⁵ The effect of rotation on future soundness and survival was compared by the chi-squared test. For all tests, a *p* value of < 0.05 was considered significant.

3. Results

During the study period, 37 horses had a DDF tenotomy. There were 29 mares, four stallions, and four geldings. There were 14 Quarter Horses, eight Arabians, six Thoroughbreds, and four Paints, with other breeds represented in small numbers. The average age was 9 years (range 7 months to 25 years), and the average weight was 429 kg (range 227–552 kg). All horses had a chronic form of the disease (range 2 weeks to 7 years).

Seventy-seven percent (27/35) of the horses were

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alive 6 months following surgery, and 60% (19/32) were alive for at least 2 years. Of horses living 2 years or more, the average survival time was 4.5 years (9/19 were still alive). Two horses were lost to follow-up, and three had less than 2 years of follow-up available. Mean follow-up time was 5.76 years (range 1–10 years). All horses were Obel grade III (22) or Obel grade IV (15) lame at presentation, and radiographs were available for 30 cases. There was no difference between Obel grades of lameness or degree of rotation with regard to survival. Ten of the horses became sound enough for light riding. There was not a correlation between Obel grade of lameness or degree of rotation and the ability to return to light riding. Similarly, body weight had no effect on survival.

Follow-up information was obtained by interview with owners in 30/37 cases. Seventy-three percent (22/30) of owners would have the procedure repeated, 17% (5/30) would not, and 10% (3/30) were unsure. If owners were not reachable, follow-up was obtained from referring veterinarians or case records.

4. Discussion

One study reported a return to limited athletic activities (five horses) or pasture soundness (six horses) in 11/13 horses with chronic laminitis operated on at the pastern level.² The results from another study, however, in which the surgeries were performed at the midcannon level, were less encouraging, with only 6/20 cases surviving longer than 6 months.⁴ That study consisted mostly of cases in the acute stage of laminitis. Our population consisted of horses with chronic or acute exacerbations

of chronic laminitis. It appears that the surgery is less effective in acute cases. Our results correspond with those of a previous paper.³ We rarely see an indication to operate at the pastern level.

We measured success as the ability to survive 2 years or greater. Considering the severe nature of the disease in this population, a 60% success rate seems encouraging, especially considering the lack of available alternatives for refractory cases. Although some candidates for the surgery may become comfortable enough to ride, pasture or breeding soundness is a more realistic goal. The quality of life following surgery generally improves as reflected by the high percentage of satisfied owners.

5. Conclusions

In conclusion, some cases that are refractory to medical treatment may benefit from DDF tenotomy. Most of the horses in this study had a severe form of laminitis with a high level of pain and rotation. In all cases, the response to medical therapy had been unsatisfactory, and many owners were considering euthanasia.

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