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MINIMALLY INVASIVE DESMOTOMY OF THE INFERIOR CHECK LIGAMENT IN HORSES

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Topic: Surgery

Purpose of the work. To present our experience with ultrasound guided inferior check ligament (ICL) desmotomy and describe a modification of this procedure. This modification involves using an adapted surgical instrument to assist with a minimally invasive isolation and transection of the ICL.

Materials and used methods. Thirty one foals younger than 1 year (range 4-8 months) underwent ultrasound guided ICL desmotomy. Twenty eight foals were presented with stage 1 distal interphalangeal joint flexural deformity (DIPJD) unresponsive to conservative treatment and 3 foals were presented with stage 2 distal DIPJD unresponsive to conservative treatment. Four horses more than 1 year (range 16-28 months) were presented with stage 2 DIPJD. Before surgery, corrective trimming was performed as necessary to gain a normal foot conformation and, in all cases a corrective shoeing with toe extension (Hoof acrylics in foals and shoe with extended toe in older horses) was applied to the foot and was used for 2 to 3 months post-operatively. In foals and in intractable horses, this surgery was performed under general anaesthesia, in dorsal or lateral recumbency, depending on the surgeon’s preference. However, in most adult horses, this surgery can be completed on sedated standing horse with local anaesthesia. Recently the authors improved this technique by using the Desjardins forceps in the last five cases.

Outcomes. In all foals, minimally invasive ICL desmotomy corrected the limb deformity. This surgical procedure corrected the stage 2 DIPJD in 3 horses, and in one horse we had an acceptable improvement of the deformity. This procedure was also successful in correcting and improving flexural deformity of the distal interphalangeal joint in 95% of horses. All cases but 4 in this series showed excellent wound healing. Three foals developed moderate wound swelling and persistent minimal scarring. One horse developed wound swelling which resulted in moderate and persisting wound scarring. The cosmetic results following the minimally invasive procedure are excellent. In the last 5 cases (4 foals and 1 horse) and allowed an easier isolation and transection of the ICL.

Conclusions. Ultrasound guidance, being established as an excellent modality for tendon and ligament surgery in the horse, enjoys application to correct limb flexural deformities. In our series, minimally invasive ICL desmotomy was successful in correcting limb deformity in all the foals, including those with grade 2 DIPJD. In horses, 3 were corrected while one showed an acceptable improvement of the deformity. This procedure was also successful in correcting and improving flexural deformity of the distal interphalangeal joint in 95% of horses compared with 69% and 88% of cases previously reported using the common incisional procedure. As in a previous report, our higher success can also be attributed to the number of young horses and to the corrective shoeing applied in all cases prior to surgery. Using ultrasound guidance to ensure that ICL was fully transected at the end of the surgery may also explain this success. The cosmetic results following the minimally invasive procedure are much better than in the open incisional procedure. We believe it is important to place the corrective shoe prior to surgery in order to avoid working with the limb immediately after surgery and adding unnecessary trauma to the surgical wound. The Desjardins forceps used in the last 4 cases of our series was a better assistance that the other forceps with the isolation and transection of the ICL. Ultrasound aided ICL desmotomy offers the advantages of minimally invasive surgery which include: 1) limited incision size, 2) decreased incision morbidity, 3) decreased post-operative scarring and better cosmetic appearance, 4) reduced surgical time and 5) may be performed on a standing horse.


Bibliography


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