Highlights of recent clinically relevant papers

**Ethanol treatment for distal tarsal joint osteoarthritis**

L. Lamas and colleagues from the UK have recently published the results of their study on the use of ethanol in the treatment of distal tarsal osteoarthritis (Lamas et al. 2012).

Intra-articular ethanol has been described to promote distal tarsal joint ankylosis. Its use and results in clinical cases affected by osteoarthritis (OA) have not been reported. This study was performed to describe and evaluate the results of treatment of distal tarsal joint OA by facilitated ankylosis stimulated by intra-articular ethanol injection. Twenty-four horses met the inclusion criteria of tarsometatarsal and centrodistal joint OA diagnosed by a positive response to intra-articular analgesia, radiographic evaluation and recurrence of lameness ≤ 4 months after intra-articular medication with a corticosteroid. Horses were sedated and, following a radiographic contrast study of the tarsometatarsal joint, medication with 2–4 ml of either 100% pure ethanol (G100) or a 70% ethanol (G70) solution was applied. Horses were classified as improved based on a 50% reduction from initial lameness grade combined with an increase in exercise level. Of the 24 horses included in this study, 20 had the treatment performed bilaterally and 4 unilaterally. All horses were available for initial follow-up examination and 21 for a second one 6–9 months after treatment. This represented a total of 44 treated limbs and 35 available for long-term follow-up. Of these, 21/35 (60%) were considered improved, which corresponds to 11/21 horses (52%). Of 21 horses, 4 (19%) deteriorated and 2 of these developed significant complications related to treatment.

The authors concluded that distal tarsal joint ankylosis with ethanol should be considered a safe and economic treatment in cases of distal tarsal joint OA that fail to show long-term improvement with intra-articular corticosteroid treatment. The importance of performing an adequate radiographic contrast study of the tarsometatarsal joint prior to treatment is highlighted.

**Angular limb deformities of the distal radius**

E.R. Carlson and colleagues from the USA have published this study comparing the complications after 2 bridging techniques for treatment of carpal angular limb deformities (Carlson et al. 2012).

Surgical correction of carpal angular limb deformities by growth retardation is commonly undertaken with a screws and tension band wire loop technique (S&W) or a single transphyseal screw (STS). This study compares the prevalence of complications serious enough to require follow-up radiographs after S&W and STS bridging in the distal radius of Thoroughbred (TB) yearlings. Medical records and radiographs from TB yearlings (age range 261–457 days) treated for carpal angular limb deformities at a single hospital over 2 years were reviewed. Each of the techniques was used exclusively during a single year. The complication threshold criterion for inclusion was the need for nonroutine radiographs of the operated site anytime after implant insertion or removal.

Of 568 horses, 253 received S&W and 315 received STS. Horses were of similar age at the time of surgery for STS and S&W. Single transphyseal screws were left in place for a significantly shorter amount of time (16 days). Sex, the limb(s) treated and medial vs. lateral placement were not significantly different between techniques. Complications included physitis post implant removal, metaphyseal collapse post implant removal, infection, overcorrection and seroma formation severe enough to require radiography. Physitis and metaphyseal collapse occurred significantly more frequently with STS compared with S&W. Infection, overcorrection and seromas were not significantly different between techniques.

The STS and S&W techniques are both viable treatment options for correction of carpal angular limb deformities. However, horses treated with STS bridging have a significantly increased risk of developing the post correction complications of moderate to severe physitis and metaphyseal collapse compared with horses treated with S&W bridging.

**Use of serum anti-Müllerian hormone concentrations to diagnose granulosa-cell tumours**

B.A. Ball and colleagues from the USA and Brazil have recently published the findings of their study to evaluate the use of serum anti-Müllerian hormone (AMH) concentrations for endocrine diagnosis of granulosa-cell tumours (GCTs) in mares (Ball et al. 2012).

Current diagnosis of GCTs in mares combines rectal findings, behaviour changes and ultrasonographic findings with endocrinological assays. A finding of high serum concentration of inhibin +/− increased testosterone combined with low circulating progesterone has been regarded as typical of a GCT. However, circulating levels of testosterone and inhibin also increase with pregnancy and the current sensitivity of endocrinological markers for the detection of GCTs is less than 90%. Serum concentration of AMH has been used in humans for diagnosis of GCTs and was investigated in this paper as a potential biomarker in mares. Serum samples previously analysed for inhibin,
testosterone and progesterone were analysed for AMH using a previously validated ELISA. Information was then gained from referring veterinary surgeons to determine if a histological and/or post mortem diagnosis of GCT had been determined. The sensitivity of AMH for the detection of histologically confirmed GCTs was 98% – significantly higher than other endocrinological assays or combinations thereof. A previous study found that concentrations of AMH were not affected by pregnancy and did not vary according to stage of the oestrous cycle. The authors concluded that serum concentration of anti-Müllerian hormone may be useful in the diagnosis of granulosa-cell tumours in mares.

**How precise are ultrasonographic measurements?**

J.M. Zauscher and colleagues from Berlin and Vienna have published the results of this study evaluating the intra- and interobserver variability in ultrasonographic measurements of the proximal aspect of the suspensory ligament in the horse (Zauscher et al. 2012).

Ultrasonographic measurement of the proximal suspensory ligament is frequently performed in equine practice in the evaluation of both forelimb and hindlimb lameness. This study assessed the intra- and interobserver variability in measurement of the proximal suspensory ligament to assess if measurements could be used reliably in the diagnosis of proximal suspensory desmitis. Fourteen horses were used in the study and a variety of transducers and techniques were used to determine if they affected the variability. Standard measurements were taken from each image and each horse had images acquired of all 4 legs on 2 occasions by 2 separate operators. Agreement indices and limits of agreement were used to assess the inter- and intraoperator variability. Only the dorsopalmar/plantar thickness in longitudinal and transverse planes was found to have excellent intra- and interoperator agreement, suggesting this is the most reliable ultrasonographic measurement of proximal suspensory ligament dimensions. Other measurements were significantly more variable, with hindlimb measurements being less reliable than forelimb. A number of anatomical reasons for this variability are discussed.

There is considerable variation in ultrasonographic assessment of the proximal suspensory ligament in horses, with the exception of the dorsopalmar/plantar thickness measured on a transverse plane. Therefore ultrasonographic measurements should not be used as objective determination of proximal suspensory ligament size.

**Proximal hindlimb flexion**

A.R. Armentrout and colleagues from Kansas State University, USA, have published the findings of their study comparing the interpretation of results using different durations of flexion when examining horses for lameness (Armentrout et al. 2012).

The flexion test is routinely used in lameness and prepurchase examinations. There is no accepted standard for duration of flexion or evidence that interpretation of results would differ with different durations of flexion. The authors hypothesised that there would be no difference in interpretation of proximal hindlimb flexion for 5 or 60 s.

Video recordings of lameness examinations of 34 client-owned horses were performed that included: baseline lameness, proximal hindlimb flexion for 60 s and flexion of the same limb for 5 s. Videos were edited to blind reviewers to the hypothesis being tested. The baseline lameness video from each horse was paired with each flexion to make 2 pairs of videos for each case. Twenty video pairs were repeated to assess intraobserver repeatability. Fifteen experienced equine clinicians were asked to review the baseline lameness video followed by the flexion test and grade the response to flexion as either positive or negative. Potential associations between the duration of flexion and the likelihood of a positive flexion test were evaluated using generalised linear mixed models. A kappa value was calculated to assess the degree of intraobserver agreement on the repeated videos. Significance level was set at P<0.05.

The results indicated that proximal hindlimb flexion of 60 s was more likely to be called positive than flexion of 5 s (P<0.0001), with the likelihood of the same interpretation 74% of the time. The first flexion performed was more likely to be called positive than subsequent flexions (P = 0.029). Intra-assessor agreement averaged 75% with κ = 0.49.

The authors concluded that proximal hindlimb flexion of a limb for 5 s does not yield the same result as flexing a limb for 60 s. Shorter durations of flexion may be useful for clinicians that have good agreement with flexions of 5 and 60 s.

**S. WRIGHT**

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**References**


