Transphyseal Bridging Techniques in the Treatment of Angular Limb Deformities of the Thoroughbred Distal Radius

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Horses treated with single transphyseal screw (STS) bridging have a significantly increased risk of developing physitis or metaphyseal collapse compared with horses treated with screw and wire (S&W) bridging. Authors’ addresses: University of Illinois at Urbana-Champaign, 1102 West Hazelwood Drive, Urbana, Illinois 61802 (Carlson and Stewart); and Rood and Riddle Equine Hospital, PO Box 12070, Lexington, Kentucky 40580-2070 (Bramlage, Embertson, Ruggles, Hopper); e-mail: ercdvm@gmail.com. © 2010 AAEP.

1. Introduction
Surgical correction of carpal angular limb deformities by growth retardation is commonly undertaken by either screw and wire (S&W) or single transphyseal screw (STS) bridging. This paper compares complications after S&W or STS bridging in the distal radius of Thoroughbred yearlings.

2. Materials and Methods
Medical records and radiographs from two years were reviewed. Each of the techniques was used exclusively during a single year. Signalment, limb(s) affected, type of implant, implant location, duration of implantation, and complications were documented.

3. Results
Of 568 horses, 253 received S&W (2003) and 315 received STS (2005). Horses were significantly older at the time of surgery for STS (385 days) versus S&W (374 days). Lateral placement for treatment of carpal varus was the most frequent location of implant placement. STS were left in place for a significantly shorter amount of time than S&W. Sex, the limb(s) treated, and medial versus lateral placement were not significantly different between techniques.

Complications included physitis, metaphyseal crushing, infection, and seromas. Physitis and metaphyseal crushing occurred more frequently with STS compared with S&W, whereas infection and seromas were not significantly different between techniques. All physitis in STS horses occurred after growth resumed following screw removal.

3. Discussion
The STS and S&W techniques are both viable treatment options for carpal angular limb deformities. However, horses treated with the STS technique have a significantly increased risk of developing physitis or metaphyseal collapse compared with horses treated with the S&W technique.