Arthroscopic Injection of Corticosteroids Into Subchondral Cystic Lesions of the Medial Femoral Condyle in Horses

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Arthroscopic injection of corticosteroids into the lining of subchondral cystic lesions in the medial femoral condyle of horses is an effective first-line treatment for this condition. It yields a similar chance of success as debridement but with less chance of the lesion enlarging and less disruption of the articular surface. Authors’ addresses: Veterinary Teaching Hospital, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO 80523 (Wallis, Goodrich, Hendrickson, Baxter); Equine Orthopaedic Research Laboratory, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO 80523 (Goodrich, McIlwraith, Frisbie, Kawcak); and Private Practice, Millsap, TX 76066 (Trotter); e-mail: ty.wallis@colostate.edu (Wallis). © 2006 AAEP.

1. Introduction
Subchondral cystic lesions (SCLs) of the medial femoral condyle (MFC) are a significant cause of lameness in horses, and they present a therapeutic challenge to the equine surgeon. We hypothesized that injecting the lining of these SCLs with corticosteroids using arthroscopic guidance would yield a higher chance for intended athletic use than using arthroscopic debridement as previously reported.1

2. Materials and Methods
Records of 48 cases were reviewed in which SCLs of the MFC were diagnosed radiographically and treated by arthroscopic injection of corticosteroids into the cystic lining. Signalment, lameness data, lesion location and characteristics, surgical technique, and radiographic data, when available, were collected. For lesion typing in the MFC, a modification of the classification by Howard et al.1 was used, including type 1, 2A, 2B, 3, and 4. For size data, measurements were taken of the width of the SCL, height of the SCL, width of the cloaca, and width of the articular surface affected as well as the width of the MFC for use as a ratio. All measurements were taken using the caudocranial radiographic view of the stifle. A modification of the radiodensity index (RDI) previously reported by Jeffcott and Kold2 was used by taking five measure-
ments on a densitometer within the SCL. Success for the surgical procedure was defined as the horse being able to perform soundly in its intended athletic discipline. Horses that returned soundly to their intended discipline but were later retired for injuries to other limbs were also included in this group. All results were compared using \( \chi^2 \) analysis, and significance was set at \( p < 0.05 \).

3. Results

Telephone conversations or examination follow-ups were available on 42 cases. Radiographic follow-up was available on 19 cases, and improvement in size and density were recorded for these cases. Overall, slightly more than three-fifths of the horses were classified as successful, which does not include young horses that remain unbroken and horses that were retired to breeding without being given a chance to perform. Approximately four fifths were classified as improved but not sound. There was no association found between success and age (even when separated into age groups of \( \leq 3 \) yr and \( > 3 \) yr), sex, bilateral versus unilateral lesions, lesion location, or corticosteroid used. Paint Horses were less successful than average, and Thoroughbreds were more successful than average. When pre-operative radiographs were available and type was known, there was no significant association between lesion type and success. There was a significant association between the lack of radiographic signs of osteoarthritis on preoperative radiographs and success. For those cases with radiographic follow-up, decreased size of the SCL, improvement in RDI of the SCL, or improvement in RDI of the subchondral bone surrounding the SCL was not associated with success.

4. Discussion

This technique was developed by one of the authors based on the previously reported finding that the linings of SCLs produce inflammatory mediators that enhance bone absorption. The technique described here is now used as a first option by the authors, because it seems to yield a similar chance of success as debridement with fewer SCLs enlarging as is occasionally seen with debridement. In addition, there is significantly less disruption of the articular surface. If injection into the lining of the SCL does not improve the lameness, the recommendation is to re-operate on the horse and debride the SCL. This study highlights the differences in prognosis for different breeds and the need to develop improved techniques for Paint Horses. Furthermore, the type of lesion present is not an important prognostic factor nor are a lack of improvement in size or density of the lesion on follow-up radiographs.

References