Arthroscopic and Ultrasonographic Boundaries of the Equine Femorotibial Joints

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There are arthroscopic and ultrasonographic limitations to the visualization of the soft tissue structures of the femorotibial joints. A synergistic use of both modalities can improve the overall understanding of soft tissues in the joint. Authors’ address: Gail Holmes Equine Orthopaedic Research Center, Colorado State University, 300 West Drake Road, Fort Collins, Colorado 80523-1678; e-mail: barrettdvm@gmail.com. © 2009 AAEP.

1. Introduction
Although descriptions of the visible soft tissues of the femorotibial joints exist for both arthroscopy and ultrasonography, there is little literature that discusses in detail the combined findings of these modalities. The goal of this paper is to further elucidate the ultrasonographic and arthroscopic boundaries of the normal equine femorotibial joints.

2. Materials and Methods
Simultaneous arthroscopy and ultrasonography were performed on 10 cadaver stifles and bilateral stifles of a horse that underwent non-recovery surgery. The arthroscopy probe was visualized ultrasonographically, and concurrent video and still images were acquired.

3. Findings
Arthroscopy provides good visualization of the cranial meniscal ligaments, the distal portion of the cranial cruciate ligament, and the proximal portion of the medial collateral ligament within the joint capsule, and it provides a limited view of the abaxial border of meniscus. Ultrasound allows for visualization of the menisci, collateral ligaments, and cranial meniscal ligaments in their entirety and a portion of the cranial cruciate ligament.

4. Discussion
By comparing the ultrasonographically and arthroscopically visible structures, this study allowed for a more complete understanding of the advantages and limitations of each modality. The ability of ultrasound to resolve mild pathologic changes should be further explored. When used together, these modalities can provide a more global image of the femorotibial joints.