Ultrasonographic Appearance of Normal and Injured Lateral Patellar Ligaments in the Equine Stifle

Rachel Gottlieb, DVM*; Mary Beth Whitcomb, DVM, MBA, ECVDI (LA Assoc)†; Betsy Vaughan, DVM; Larry D. Galuppo, DVM, Diplomate ACVS; and Mathieu Spriet, DVM, MS, Diplomate ACVR, ECVDI

Lateral patellar ligament injuries are uncommon but significant injuries in horses. Knowledge of normal ultrasonographic variations is important to differentiate normal from injured lateral patellar ligaments. Authors’ addresses: William R. Pritchard Veterinary Medical Teaching Hospital (Gottlieb) and Department of Surgical and Radiological Sciences (Whitcomb, Vaughan, Galuppo, Spriet), School of Veterinary Medicine, University of California, Davis, CA 95616; e-mail: rachel.f.gottlieb@gmail.com. †Corresponding author; *presenting author (current address: Northwest Equine Performance, 25230 S Eldorado Road, Mulino, OR 97042). © 2013 AAEP.

1. Introduction
Ultrasound is widely used in horses with lameness localized to the stifle; however, limited information is available regarding the appearance of the normal and injured lateral patellar ligament (LPL).

2. Materials and Methods
Twelve horses without stifle lameness underwent ultrasound examination of both LPLs, and ultrasonographic features were recorded. Eighteen horses with LPL injury were identified from cases presenting for stifle ultrasound from 1999 to 2011.

3. Results
The normal appearance of the LPL changes from the patella to the tibial tuberosity. The LPL is poorly defined at its origin, becomes flattened and somewhat bilobed over the lateral trochlear ridge, and then assumes a large oval-triangular shape at the joint level, where echogenicity and fiber pattern are variable as the result of invaginations extending from its deep margins. The LPL is tapered and has striations at its tibial insertion. Eighteen LPL injuries were identified in horses of multiple breeds and uses. All were acute in nature. Twelve presented with wounds. Severe lameness (Grades 4 to 5/5) was present in 11 of 18 horses. Radiography showed fractures of the tibial tuberosity (n = 6), patella (n = 4), and lateral trochlear ridge (n = 1). Ultrasonographic lesions were graded as severe in 78% of cases. The mid-insertional portion of the ligament was most often affected, and fractures directly involved the LPL in nine horses. Three horses were euthanized because of severe concurrent injury. Five were treated for osteomyelitis and one for synovial sepsis. Recheck ultrasound in four horses showed a stable to slightly improved appearance. Eight horses returned to their previous use, two were retired, two were lost to follow-up, and three remain in rehabilitation.
4. Discussion
Normal variations in shape, echogenicity, and fiber pattern of the LPL are important considerations to prevent false-positive diagnoses during stifle ultrasound exams. LPL injuries were often severe and associated with craniolateral stifle trauma. Prognosis varied from fair to good in horses with primary LPL injury.