Size and Geometry of Apical Sesamoid Fracture Fragments as a Determinant of Prognosis in Thoroughbred Racehorses

J. Lacy Kamm, DVM*; Larry R. Bramlage, DVM, Diplomate ACVS; Lauren V. Schnabel; Alan J. Ruggles, DVM, Diplomate ACVS; Rolf M. Embertson, DVM, Diplomate ACVS; and Scott A. Hopper, DVM, Diplomate ACVS

Racehorses that undergo surgery to remove larger apical fractures of the proximal sesamoid bones do not have a worse outcome than those horses with smaller fractures. The fractures in the forelimb medial proximal sesamoid bones have a worse prognosis than fractures in other locations. Authors’ addresses: Clinical Sciences, Colorado State University Veterinary Teaching Hospital, Fort Collins, CO 80523 (Kamm); Cornell University Hospital for Animals, Ithaca, NY 14853 (Schnabel); Rood and Riddle Equine Hospital, PO Box 12070, Lexington, KY 40580-2070 (Bramlage, Ruggles, Embertson, Hopper); e-mail: lacykamm@gmail.com. *Corresponding author. © 2011 AAEP.

1. Introduction
Analysis was performed to examine a method for refining the preoperative prognosis for horses that need surgery to remove apical fractures of the proximal sesamoid bones (PSBs). The objectives of this study were to determine (1) if a difference exists in the size or configuration of apical fractures between the different limbs and specific anatomical locations of the PSBs and (2) if size or configuration of these fractures could predict the prognosis for return to racing.

2. Materials and Methods
The study included 110 weanlings and yearlings and 56 training racehorses that underwent surgery to remove apical PSB fractures. Radiographs of the fractures were used for measurement of abaxial and axial proportions and the abaxial-to-axial ratios. Race records were used to determine average earnings per start and total postoperative starts. Analysis of variance and regression analyses were used to compare the fragments. Significance was established at \( p \leq 0.05 \).

3. Results
There was a significantly larger abaxial-to-axial ratio (more transverse fracture) for the forelimb medial sesamoids than for all other sesamoids in untrained racehorses (\( p = 0.03 \)). There were no other significant differences in size in either the untrained or training groups. The fractures happened at a consistent location in all of the sesamoids. There was no relationship between fracture size or configuration and average earnings per start nor total postoperative starts.

Research Abstract

NOTES
3. Discussion
Apical fractures in weanlings and yearlings tend to be more transverse in the forelimb medial PSBs than the other PSBs. In horses with apical sesamoid fractures, apical fracture size and geometry do not appear to affect the prognosis for racing.