

Stress Fractures of the Tibia and Humerus in 99 Thoroughbred Racehorses

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Tibial stress fractures were predominantly seen in unraced 2-year-old Thoroughbred racehorses, whereas humeral stress fractures were seen in a slightly older population. Tibial fracture recurrence was rare whereas contralateral limb recurrence was not uncommon with humeral fractures. Radiographic detection of tibial fractures was more reliable than humeral fractures. Authors' address: The Ohio State University Veterinary Teaching Hospital, 601 Vernon L. Tharp St, Columbus, OH 43210-1089. © 2000 AAEP.

1. Introduction

Stress fractures of the tibia and humerus have recently become a well recognized cause of lameness in racehorses.¹⁻³ Nuclear scintigraphy is the preferred diagnostic modality for their detection.¹⁻⁴ The purpose of this paper is to report the clinical findings and outcome in a large group of horses diagnosed with tibial or humeral stress fractures.

2. Materials and Methods

Medical records of Thoroughbred racehorses diagnosed as having humeral or tibial stress fractures from 1992 to 2000 were reviewed. Diagnosis was determined from the history and clinical findings and confirmed using scintigraphy. Outcome was determined from race records and trainer interview.

3. Results

Tibial stress fractures (74) were diagnosed in 61 horses, bilateral fractures occurred in 10 horses (16%), 3 fractures occurred in the same leg in 1 horse and fracture recurrence was seen in the contralateral limb in 1 horse. Median age was 2 years (range, 2 to 6 years), and there was no gender or limb predilection. Mean grade of lameness was 3/5 (range, 1 to 4), and a positive spavin test was seen in 76% of 46 horses recorded. Stress fractures occurred at the proximal (11%), mid-diaphyseal (77%), and distal (12%) caudal tibial cortex. Radiographic evidence of a stress fracture was identified in 44 of 58 (76%) tibiae radiographed at the proximal (86%), mid-diaphyseal (80%), and distal tibia (33%). The caudolateral cortex was most commonly affected. Race records revealed 41 horses had not raced prior to fracture, 42 horses have returned to racing at this stage (69%), and 5 horses are still convalescing. Mean time to first race start was 7.8 months.

Humeral stress fractures (47) were diagnosed in 39 horses, 2 horses had bilateral fractures, 1 horse had a repeat fracture, and fracture recurrence was seen in the contralateral limb in 5 horses (13%). One horse was diagnosed with a tibial stress fracture previously. Median age was 3 years (range, 1 to 6), there was no gender predilection and 60% of fractures occurred in the left limb. Mean grade of lameness was 3/5 (range, 1 to 4). Humeral stress fractures occurred at the caudoproximal (38%), cranioproximal (4%), caudodistal (43%), and craniodistal (15%) cortices. Radiographic evidence of a stress fracture was identified in 18 of 38 humeri radiographed (47%). Fractures of the proximocaudal, proximocranial, and distocranial sites were identifiable radiographically in 18 of 25 fractures, whereas caudodistal fractures were not demonstrable in any of the 13 cases radiographed. Race records revealed 8 horses had not raced prior to fracture, 22 horses have returned to racing at this stage (56%), and 5 are still convalescing. Mean time to first race start was 8.8 months. All horses in this study were managed with sequential stall, yard, and paddock rest for 3 to 6 months.

4. Discussion

Tibial stress fractures in this study were predominantly seen in unraced 2-year-olds, whereas humeral stress fractures were seen in a slightly older population more likely to have raced.

The lack of sex or limb predilection, low recurrence rate and the moderate occurrence of bilateral tibial fractures is consistent with other studies.^{1-3,5} Our study revealed a predominance of mid-diaphyseal caudolateral fractures similar to other stud-

ies,^{3,5,6} which were best demonstrated with a CrCaLMO radiographic view.

Humeral fracture recurrence in the contralateral limb was not uncommon, whereas recurrent tibial fractures appear to be a rare finding.^{1,2,5} The different fracture recurrence rate may be due to differences in age or bone biomechanics.

The high incidence of caudodistal humeral fractures in our study differs from others,^{1,4,6} and may reflect altered training regimes and track surfaces. Radiographic identification of caudodistal humeral fractures was unrewarding, possibly due to the reported medial location of these fractures.⁴ Conservative management of tibial and humeral stress fractures has a good prognosis for returning horses to racing.^{2,3,5}

References and Footnotes

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