Radiographic Proximal Sesamoiditis in Thoroughbred Sales Yearlings

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Abnormalities of proximal sesamoid bones are a common confusing radiographic finding in Thoroughbred sales yearlings. Greater than two abnormally shaped and sized linear defects affect a horse's future athletic performance and earning potential. Normal conformed vascular channels have no effect. Authors' address: Rood and Riddle Equine Hospital, P.O. Box 12070, Lexington KY 40580. © 1997 AAEP.

1. Introduction
Sesamoiditis has been shown to be the most common radiographic abnormality of front and hind fetlocks of yearling Thoroughbred survey films. The purpose of this study was to evaluate survey radiographs of yearling Thoroughbred sesamoid bones and analyze subsequent racing performance and earning potential.

2. Materials and Methods
Radiographs of the sesamoid bones (fore and hind) obtained during survey radiography of 487 Thoroughbreds sales yearlings over 4 years were reviewed. The abaxial surface of proximal sesamoids was examined and graded in five ascending categories: (1) no significant abnormalities, (2) one to two linear defects <2 mm, (3) more than two linear defects <2 mm, (4) one to two abnormally shaped linear defects >2 mm, and (5) more than two abnormally shaped linear defects >2 mm. In addition, (6) lucency present at the distal abaxial border, and (7) irregular contour of the abaxial border with bone production were recorded if present.

Race records from the Jockey Club Information Service were used to determine number of starts, total earnings, and average earnings per start for the 2- and 3-year-old years. The two-sample t procedure was used to determine statistical significance.

3. Results
There were 283 males and 204 females in the population. Three hundred sixty horses had no abnormal linear defects, lucency at the distal abaxial border, or irregular abaxial border, and they were considered normal. This group was used as the control population. Of these normal yearlings, 51% raced at 2 with a mean of 1.7 starts, mean total earnings of $7253, and a mean average earnings per start of $4189. At 3, 79% raced with a mean number of starts of 5.7, a mean total earnings of $21,730, and an average earnings per start of $4443. Eighty-six horses had abnormally shaped linear defects (categories 4 and 5). Twenty-nine were affected in forelimb only, 13 in both, and 44 in the hindlimb only. Thirty-five percent of the forelimb
only raced at 2; 79% raced at 3. Forty-nine percent of the hindlimb only raced at 2; 84% raced at 3.

Sixteen percent of the population had one to two abnormally shaped linear defects (category 4). Of these 76 yearlings, 46% raced at 2 with a mean of 1.1 starts, mean total earnings of $6160, and a mean average earnings per start of $5066. At 3, 84% raced with a mean of 6.3 starts, a mean total earnings of $33,844, and a mean average earnings per start of $6336.

Ten yearlings (2% of the population) had more than two abnormally shaped linear defects (category 5). Of these ten horses, 30% raced at 2, average starts of 0.7, average total earnings $1135, and average earnings per start of $1621. At 3, 70% raced, average starts were 3.4, average total earnings were $7133, and average earnings per start were $2098. There was a significant decrease in the mean number of starts (p = 0.034) and mean total earnings (p = 0.038) at 2 years of age, and mean number of starts (p = 0.013) and mean total earnings (p = 0.03) at 3 years of age.

Thirty-nine horses had a lucency at the distal abaxial border. Of these, 46% raced at 2, mean 1.9 starts, mean total earnings of $6370, and mean average earnings per start of $2291. Seventy-two percent raced at 3, mean 5.5 starts, mean total earnings of $22,564, and mean average earnings per start of $4445.

Thirty horses had an irregular abaxial border. Forty-seven percent raced at 2, with a mean of 1.3 starts, mean total earnings of $7257, and mean earnings per start of $5789. Eighty percent raced at 3, with a mean of 6.3 starts, mean total earnings of $56,673, and mean earnings per start of $11,483.

4. Discussion
Sesamoid changes occurred primarily at the nonarticular abaxial border near the suspensory insertion.1–3 Many of these variations may be normal. There was no difference in normal sesamoid horses and the racing performance of horses with one to two abnormal linear defects, lucency at the distal abaxial border, or irregular abaxial border in both the 2- and 3-year-old racing years. A previous study showed similar results in Standardbreds in their 3- and 4-year-old racing years.2

In the horses with more than two abnormal linear defects, a significant decrease was seen in both number of starts and total earnings as 2- and 3-year olds. Clinical lameness exams were not performed in these horses. However, survey radiographic exams are often a large part of the decision making of the future athletic performance of a sales yearling. This study supports that radiographically severe sesamoiditis, greater than two abnormal vascular channels, in a yearling affects future performance and earning potential in its 2- and 3-year-old racing careers.

References