Racing Performance of Thoroughbred Racehorses After Arthroscopic Removal of Dorsoproximal First Phalanx Osteochondral Fragmentation

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The arthroscopic removal of dorsoproximal first phalanx osteochondral fragmentation allows Thoroughbred racehorses a rapid and successful return to racing at their previous or higher level of racing performance. Authors’ address: Rood & Riddle Equine Hospital, P.O. Box 12070, 2150 Georgetown Rd., Lexington, KY 40580. © 1997 AAEP.

1. Introduction
Decreased convalescent time has made the arthroscopic removal of dorsoproximal first phalanx osteochondral fragmentation (P1 chip fractures) the treatment of choice. A recent study showed that 65% (122/188) of Thoroughbred racehorses operated on arthroscopically for P1 chip fractures returned to race at least one start. Forty-six percent (87/188) raced at the same or higher class after surgery.1

The purpose of this study was to examine the racing performance of 461 Thoroughbred racehorses after arthroscopic surgery for dorsoproximal P1 chip fractures and to determine the longevity of their careers and the quality of their performance.

2. Materials and Methods
Hospital records, radiographs, and lifetime race records were examined for 461 Thoroughbred racehorses that underwent arthroscopic surgery for the treatment of dorsoproximal P1 chip fractures at the Rood & Riddle Equine Hospital between 1986 and 1995. To be included, horses operated on in 1994 and 1995 had to be of racing age during 1996.

3. Results
Six hundred and fifty-nine dorsoproximal P1 chip fractures were arthroscopically removed from 574 joints in 461 horses. Fifty-one percent (338/659) of all chips occurred on the left forelimb, and 37% (245/659) occurred on the right forelimb. Seven percent (44/659) occurred on the left hindlimb and 5% (32/659) occurred on the right hindlimb. Fifty-eight percent (267/461) of the horses had a chip fracture on the medial left forelimb, 40% (185/461) had one on the medial right forelimb, 19% (89/461) had one concurrently on the medial left and right forelimbs, 15% (71/461) had one on the lateral left forelimb, and 13% (60/461) had one on the lateral right forelimb. A radiologic and arthroscopic examination revealed an average of 1.43 chips per horse, 1.15 chips per joint, and 1.25 affected joints per horse.

Eighty-nine percent of the horses (411/461) raced
after surgery. Eighty-two percent (377/461) raced at the same or higher class after surgery. Horses that raced before and after surgery (258) had an average of 8.4 starts (median = 6) before surgery and 13.2 (median = 11) after. The average time between surgery and first postoperative start was 189 days (median = 169). Eighty-seven percent of the horses racing before surgery (224/258) returned to race at the same or higher class. The average earning per start after surgery was less than the average earning per start before surgery in 61% of these horses (157/258) and greater in 32% (82/258). The average age at surgery was 3.1 years (median = 3).

Horses that raced after surgery, but not before (153), made an average of 14 starts (median = 10), averaged earnings of $47,676 (median = $21,470), and were 1.6 years of age at surgery (median = 2). Fifty horses (11%) did not race after surgery. Lifetime race records could not be obtained for 21 of these horses and were therefore considered as failures, even though the lack of a race record may have been caused by some extraneous influence. The 29 horses that had preoperative racing records started 11.7 races (median = 9), averaged earnings of $60,084 (median = $13,860), and were 3.5 years of age at surgery (median = 3). Overall, 30% (137/461) of horses started a Stake race postoperatively, and 38% (175/461) started an Allowance race.

4. Discussion
The incidence and location of P1 chips did not alter the number of horses that raced after surgery and horses that did not race after surgery. Neither did the number of chips per horse, chips per joint, or affected joint per horse. No difference in number of postoperative starts or race class achieved was observed between horses that had raced before surgery and those that had not. Eighty-nine percent of operated horses returned to racing, while 82% of them did so at their previous level of racing performance or above. Horses that raced preoperatively returned to racing within 6 months. Sixty-eight percent of the horses performed in a Stake or Allowance race postoperatively.

This improved level of performance over previous reports supports arthroscopic surgery as a treatment of dorsoproximal P1 chip fractures. The arthroscopic removal of dorsoproximal first phalanx osteochondral fragmentation allows Thoroughbred racehorses a rapid and successful return to racing at their previous or higher level of racing performance.

References