Ultrasonographic investigation of the Achilles tendon in elite badminton players using color Doppler.

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BACKGROUND: The most frequent injuries in badminton players are in the lower extremities, especially in the Achilles tendon. HYPOTHESIS: The game of badminton may be related to abnormal intratendinous flow in the Achilles tendon as detected by color Doppler ultrasound. To a certain extent, this blood flow might be physiological, especially when examined after match. STUDY DESIGN: Cohort study (prevalence); Level of evidence, 3. METHODS: Seventy-two elite badminton players were interviewed regarding Achilles tendon pain (achillodynia) in the preceding 3 years. Color Doppler was used to examine the tendons of 64 players before their matches and 46 players after their matches. Intratendinous color Doppler flow was graded from 0 to 4. The Achilles tendon was divided into dominant (eg, right side for right-handed players and vice versa) and nondominant side and classified as midtendon, preinsertional, and calcaneal areas. RESULTS: Of 72 players, 26 had experienced achillodynia in 34 tendons, 18 on the dominant side and 16 on the nondominant side. In 62% of the players with achillodynia, the problems had begun slowly, and the median duration of symptoms was 4 months (range, 0-36 months). Thirty-five percent had ongoing pain in their tendons for a median duration of 12 months (range, 0-12 months). Achillodynia was not associated with the self-reported training load or with sex, age, weight, singles or doubles players, or racket side. Forty-six players were scanned before and after match. At baseline, color Doppler flow was present in the majority of players, and only 7 (16%) players had no color Doppler flow in either tendon. After match, all players had some color Doppler flow in 1 or both tendons. Achillodynia and color Doppler flow were related in the nondominant Achilles tendon (chi-square, P = .008). The grades of Doppler flow also increased significantly after match in the preinsertional area in both the nondominant (P = .0002) and dominant (P = .005) side tendons. CONCLUSION: A large proportion of the players had experienced achillodynia and habitually played with a degree of pain that demanded medication. The self-reported pain was associated with increased intratendinous color Doppler flow in the nondominant Achilles tendon. Doppler flow was found in most players before and in all players after the match and therefore may in part be a physiological response to
activity.