

## BALANCE AND STRENGTH AFTER MISDIAGNOSED ACHILLES TENDON RUPTURES

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**KEY WORDS:** Achilles tendon rupture, Thompson test

**INTRODUCTION:** Misdiagnosis of complete Achilles tendon ruptures has become increasingly common. The purpose of this ongoing research is to investigate clinical and functional consequences of earlier misdiagnosed and untreated complete Achilles tendon ruptures.

**METHODS:** So far, 14 cases have been examined, 12 men and 2 women, mean age 55 years (range 32-68 years). Seven of the patients were injured during sports and the most common initial misdiagnosis was muscle strain. The mean time from injury to correct diagnosis was 12 weeks (range 3 to 52 weeks). Thirteen of the 14 ruptures were confirmed either by surgery (N=10), MRI (N=3) or both (N=4). The Thompson test was positive in all patients and a palpable gap was present in 13/14 patients. Functional tests of the healthy and injured leg were performed in 7 patients. These tests included measurement of maximal isometric plantar flexion strength performed in a supine position with straight knee and the ankle at an angle of 85 degrees. The displacement of the centre of pressure during 30 seconds of one leg standing was measured with a force plate. EMG was recorded with surface electrodes from ankle flexor and extensor muscles.

**RESULTS AND DISCUSSION:** The mean maximum voluntary plantar flexion strength was significantly lower in the injured ( $52 \pm 35$  Nm) than in the healthy leg ( $121 \pm 56$  Nm). During balancing on one leg, the mean position of the centre of pressure was significantly closer to the transverse axis of rotation at the ankle joint in the injured ( $3.7 \pm 1.9$  cm) as compared to the healthy leg ( $6.8 \pm 0.7$  cm). No significant differences in EMG activity were observed between the two legs. Such changes in strength and balance resulted, not only in an inability to participate in even light recreational activities, but also in an impaired and insecure gait.

**CONCLUSION:** The results of this study in progress highlight the importance of increasing the awareness among physicians of this type of injury as well as expanding the battery of diagnostic tools to facilitate a rapid and adequate treatment.