

ACUTE ACHILLES TENDON RUPTURE

Outcome, Prediction and Optimized Treatment

Akademisk avhandling

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien vid Göteborgs Universitet kommer att offentlig försvaras i Mölndalsaulan, V-huset, Sahlgrenska Universitetssjukhuset/Mölndal, fredagen den 31 maj 2013, kl 09.00
av

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AVHANDLINGEN BASERAS PÅ FÖLJANDE DELARBETEN:

- I. Major functional deficits persist 2 years after acute Achilles tendon rupture**
Olsson N, Nilsson-Helander K, Karlsson J, Eriksson B. I, Thomeé R, Faxén E, Silbernagel K. G
Knee Surg Sports Traumatol Arthrosc 2011; 19: 1385-93
- II. Ability to perform a single heel-rise is significantly related to patient-reported outcome after Achilles tendon rupture**
Olsson N, Karlsson J, Eriksson B. I, Brorsson A, Lundberg M, Silbernagel K. G
Scand J Med Sci Sports; E-published, DOI-10.1111/j.1600-0838.2012.01497.x
- III. A randomized, controlled study comparing stable surgical repair, including accelerated rehabilitation, with non-surgical treatment for acute Achilles tendon rupture**
Olsson N, Silbernagel K. G, Eriksson B. I, Sansone M, Brorsson A, Nilsson-Helander K, Karlsson J
Manuscript provisionally accepted for publication in Am J Sports Med.
- IV. Predictors of clinical outcome after an acute Achilles tendon rupture**
Olsson N, Petzold M, Brorsson A, Karlsson J, Eriksson B. I, Silbernagel K. G
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ABSTRACT

The optimal treatment for Achilles tendon rupture is the subject of debate and could be either surgical or non-surgical with various alternatives in terms of immobilization and rehabilitation. The purpose of this thesis was to evaluate the short- and long-term outcome of a new surgical treatment protocol, including early tendon loading and ROM training, in comparison with non-surgical treatment using a functional brace. Patients in this randomized, controlled trial were evaluated with regard to symptoms, function and complications at 3, 6 and 12 months. Predictors of outcome were assessed in a multiple linear regression model. The outcome two years after injury was also evaluated in a previous randomized study of Achilles tendon rupture. The studies showed no significant differences between surgical and non-surgical treatment in terms of symptoms, physical activity level or quality of life. There was a trend towards a greater improvement in function in surgically treated patients. No re-ruptures occurred in the group treated with the new surgical technique. The heel-rise test showed that half the patients were unable to perform a single heel rise three months after injury and this ability appears to be an important early achievement, which influences patient-reported outcome and physical activity. Future treatment protocols focusing on regaining strength early after injury appear to be of great importance. Regardless of surgical or non-surgical treatment, there were significant functional deficits on the injured side compared with the contralateral side two years after the tendon rupture and the patients appear to adjust to these changes. Treatment was a moderate predictor, in contrast to age and BMI, which were relatively strong predictors of function and symptoms respectively. This thesis found that an Achilles tendon rupture impacts heavily on a person's general health and quality of life and has a significant effect on lower leg function but with large inter-individual differences, indicating that the choice of treatment should be based on the best available evidence in combination with individual patient factors.

Keywords: Achilles tendon rupture, Outcome, Functional evaluation, ATRS

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