

Operative Versus Nonoperative Treatment Of Proximal Hamstring Avulsions.

Orthopaedics / Pelvis, Hip & Femur / Miscellaneous

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Background

Operative treatment is widely used for acute proximal hamstring avulsions (PHA), but its effectiveness compared with that of nonoperative treatment has not been demonstrated in randomized controlled trials.

Objectives

We conducted the Proximal Hamstring Avulsion Clinical Trial (PHACT) to evaluate the treatment effect on function, measured by the Perth Hamstring Assessment Tool (PHAT), after 24 months in physically active adults aged 30 to 70 years with a proximal hamstring tendon avulsion randomized to either nonoperative treatment or surgical repair.

Considering the cost and risks associated with surgery, and the fact that most of the literature recommends surgery, a noninferiority design was considered appropriate. We hypothesized that nonoperative treatment is inferior to surgical repair by less than 10 points in the PHAT score at the 2-year follow-up.

Study Design & Methods

In this randomized, noninferiority, multicenter, preference tolerant trial, ten centers in Sweden and Norway offered enrollment of patients aged 30 to 70 years old with acute PHA in a randomized trial or an observational cohort. Patients were either treated with operative reinsertion or nonoperative treatment followed by physiotherapy. The primary end point was the patient-reported Perth Hamstring Assessment Tool (PHAT) at two years of follow-up. Secondary outcome measures included the Lower Extremity Functional scale (LEFS), muscle strength, functional tests, and muscle quality analysis by MRI imaging.

Results

We enrolled 119 patients in the randomized trial and 97 in the observational cohort. In the intention-to-treat analysis, the mean PHAT scores were similar with mean (\pm SD) scores of 80.4 ± 19.3 and 77.7 ± 20.0 in the operative and nonoperative groups, respectively. The prespecified inferiority limit was not crossed (mean difference, -2.1; 95% confidence interval [CI], -9.3 to 5.1; $P=0.017$ for noninferiority). In inverse probability weighted analysis of both cohorts combined, the mean PHAT score difference was -2.6 (CI, -7.9 to 2.8). The mean LEFS score difference of -2.1 (CI, -5.7 to 1.5) supports noninferiority.

Conclusions

Surgeons might want to reconsider the use of hamstring reinsertion in 30–70-year-old patients with acute PHA because surgery does not improved outcome with a higher risk for complications. (ClinicalTrials.gov number, NCT03311997)