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Muscle strength, range of motion and function changes following hip arthroscopy

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Background: Muscle strength (MS), the range of motion (ROM) and function improvements post hip arthroscopy (HA) require in depth analysis. Also, many factors at the time of surgical intervention may play a role in prognosis.

Purpose: This study evaluated postoperative changes in hip abduction (HAB) and adduction (HAD) MS, external (HER) and internal (HIR) rotation ROM and the modified Harris Hip Score (MHHS). The factors that may influence these measurements were also evaluated.

Methods: Data from 309 patients (mean age 41.4 13.9 years) who had undergone a HA procedure were analyzed retrospectively. Repeated measures ANOVA with Bonferroni adjustment and mean of difference (MD) were used to examine differences between 2, 8 and 24 weeks postoperatively compared to preoperative scores. Multilevel modeling (MLM) was used to examine the effects of various factors on postoperative measurements.

Results: The highest improvement was seen at the 24th week postoperatively in HAB MS (MD=16.57, 95% CI [7.59, 25.55]), HAD MS (MD=18.29, 95% CI [10.17, 26.40]) and MHHS scores (MD=19.37 points, 95% CI [11.53, 27.21]) (all P <0.001). However, HER and HR ROM did not show statistically significant changes postoperatively (P=0.569). MLM showed that being older than 60 years old, a female and playing at a professional level affects postoperative measurements.

Conclusion: Following HA and appropriate physiotherapy, hip MS and function takes up to 24 weeks to show the greatest magnitude of improvement. Rehabilitation programs should be designed to accommodate the variation in postoperative progression based on age, sex and activity levels.

Biography

Mohamed Abdulla Husain is a PhD candidate in Sport at Leeds Beckett University. His research interests are in the area of sports injuries including physical and functional changes following hip arthroscopy and groin pain. He has obtained his BSc degree from Kuwait University (2008) then opened his private physiotherapy clinic in 2009. He has completed his MSc degree in rehabilitation from the University of Pittsburgh in 2013 focusing on musculoskeletal conditions.

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