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Hip Flexion Strength and Torque After Arthroscopic Fractional Lengthening of the Iliopsoas Tendon

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Summary:
This study showed that arthroscopic fractional lengthening of the iliopsoas tendon at the musculotendinous junction does not lead to a loss of hip flexion strength or torque.

Abstract:
Introduction:
With the advent of arthroscopic techniques for the hip, a fractional lengthening of the iliopsoas tendon has been advocated for treatment of a painful and snapping tendon. While reported clinical outcomes have been positive, as of yet, there is no objective data in the literature detailing the recovery of hip flexor strength and torque postoperatively. The purpose of this study was to show that patients undergoing psoas release during hip arthroscopy are able to recover their flexor strength.

Methods:
A retrospective review of a prospectively collected registry identified 50 patients (average age 33.7 years; range 12-61) who underwent an arthroscopic fractional lengthening of the iliopsoas tendon at the musculotendinous junction in combination with treatment of femoroacetabular impingement (FAI) and labral tears. No patient in this group had undergone any known hip arthroscopy on the contralateral hip. A control group of 50 patients (average age 37.8 years; range 15-58) was undergoing similar arthroscopic procedures without an iliopsoas lengthening was also identified. Strength and torque measurements for hip flexion were taken pre-operatively for bilateral hips in three separate measurements using a dynamometer. A ratio for hip extension to flexion was also calculated. These measurements were repeated post-operatively in a similar fashion at an average of 4.3 months (range 1.9-25.2) postoperatively.

Results:
Preoperatively, patients who require psoas release have significant lower strength(difference between normal vs inj)(13 vs 3.9)(p=0.001), significantly lower torque(24 vs 8.9)(difference between normal vs inj)(p=0.004), and significantly lower flexion/extension ratio((difference between normal vs. inj)(p=0.036). These differences are not seen postoperatively. Individually, psoas patients show significant improvement between preop and postop(strength 3.9 to 12.7; torque8.9 to 24.1) while control patients did not. Postoperatively, strengths were similar between psoas release and control groups.

Conclusion:
This study showed that arthroscopic fractional lengthening of the iliopsoas tendon at the musculotendinous junction did not lead to a loss of hip flexion strength or torque. Patients undergoing psoas release start with significantly increased deficits in strength and torque, but show similar strength to patients undergoing arthroscopy for FAI and labral tears postoperatively.