2019 NEHS Annual Meeting Abstract Submission

ABSTRACT TITLE *	Reoperation following zone II flexor tendon repair
Contact Person Name *	Jonathan Lans
Contact Person Email *	
Contact Person Phone Number *	
Name of who will present abstract at NEHS meeting on December 6, 2019 Please note that the same person cannot present more than one abstract at the meeting. *	Mara Meulendijks
Please indicate if the presenter is: *	• Not currently a resident or fellow
List full names of abstract authors *	Mara Meulendijks, Luca Bruin, Jonathan Lans, Frederick Wang, Kyle R. Eberlin, Neal C. Chen

ABSTRACT - should include background information and a description of methods, programs, or practices. *

Background: The goal of surgical tendon repair is to perform a repair with sufficient strength to withstand the forces encountered during rehabilitation. Biomechanical studies suggest that the strength of repair of core-suture techniques varies widely. However, there are few studies that demonstrate that these biomechanical differences are clinically relevant. We hypothesized that the core-suture technique is related to reoperation after zone II flexor tendon repair.

Methods: We retrospectively identified 201 adult patients that underwent primary zone II flexor tendon repair of 252 fingers, from January 2000 through September 2016 at three urban academic medical centers. The median patient age was 32 years (IQR: 25-45) and 141 (70%) patients were male, these were followed for a median of 2.0 years (IQR: 0.24-6.8). Both the FDP and FDS tendons were repaired in 174 (69%) fingers, in 41 fingers (16%) the FDS was excised and in 37 fingers (15%) the FDS was unaddressed. For the FDP tendon, a Modified Kessler repair was most commonly performed (n=194, 77%), followed by the Modified Becker repair (n=22, 8.7%). We performed multivariable analysis to identify factors associated with reoperation.

Results: There were 49 (19%) fingers in 42 (21%) patients that underwent reoperation at a median of 5.5 (IQR: 2.8-7.9) months. Indications for reoperation included stiffness or adhesion (n=35, 71%), suspected tendon rupture (n=12, 25%), and infection (n=2, 4.1%). Complications in patients who did not undergo a reoperation included finger stiffness (n=32, 17%), clinical re-rupture (n=5, 2.5%) and infection (n=4, 2.2 %). Multivariable analysis showed: (1) age (OR 1.1, 95% CI 1.0-1.1, p<0.001), (2) insurance through worker's compensation (OR 31, 95% CI 8.6-115, p<0.001), (3) and FDP tendon repair with a Kessler-type repair (OR 4.6, CI 1.5-14, p=0.008) compared to other techniques, were independently associated with reoperation.

Conclusion: Kessler repair technique for repair of the FDP was independently associated with reoperation, as well as older age and worker's compensation. The biomechanical strength of the core-suture repair appears to have clinical relevance based on our data.