



Thenar Atrophy in Carpal Tunnel Syndrome. Evolution of Grip Strength and Finger Pinch in Pre-and Postoperatively

Author Block: Carlos Henrique Fernandes, MD; L. M. Meirelles, Physiotherapist; Jorge Raduan Neto, MD; João Baptista Gomes dos Santos, MD; Flávio Faloppa, MD; Walter Manna Albertoni, MD - Orthopaedic Surgery / Hand Surgery Group, Universidade Federal de São Paulo, São Paulo, Brazil

OBJECTIVES

The objective of this study was to evaluate an improvement of strength and muscle atrophy in patients treated surgically with carpal tunnel syndrome accompanied by thenar muscle atrophy (figure 1).

METHODS

Between October 2008 and May 2010 a total of 49 patients and 46 hands with carpal tunnel syndrome were treated surgically. Entry criteria included a thenar muscle atrophy. There were 3 men and 46 women at age of 55 years old (range, 37-85 years). It was evaluated with the presence or absence of the thenar muscle atrophy, three and six months followed up. It was evaluated a grip, tip pinch, key pinch and palmar pinch with Jamar dynamometer and pinch gauge respectively. The statistical treatment applied to check the relevance of the difference between the mean values of the cases studied is based on the "Student t" test with a significant level set at 5%.

RESULTS

Twenty three (47%) of the forty nine (100%) hands that had thenar atrophy regained normal muscle bulk in the sixth month of follow up.

RESULTS(Cont.)

The strength of the operated hand in time, comparing the values obtained preoperatively with the third month, there were no differences between the average

	Pre	3 months	% Increase	p-test	Level of 5%
Grip strength	12,98	12,56	-3	0,57	No differences
Tip pinch	2,11	2,29	9	0,07	No differences
Key pinch	4,35	4,27	-2	0,713	No differences
Palmar pinch	2,74	2,75	0	0,962	No differences

The preoperative with the sixth month there were differences between the average.

	Pre	6 months	% Increase	p-test	Level of 5%
Grip strength	12,98	15,71	21	0,007	Differences
Tip pinch	2,11	2,74	30	0	Differences
Key pinch	4,35	5,09	17	0	Differences
Palmar pinch	2,74	3,41	24	0	Differences

The third through the sixth was also differences between the average, or whether there was an improvement in strength in the sixth month postoperative follow-up.

	3 months	6 months	% Increase	p-test	Level of 5%
Grip strength	12,56	15,71	25	0,007	Differences
Tip pinch	2,29	2,74	20	0	Differences
Key pinch	4,27	5,09	19	0	Differences
Palmar pinch	2,75	3,41	24	0	Differences

CONCLUSIONS

We concluded that the strength in patients with thenar atrophy caused by carpal tunnel syndrome has its recovery from three months after the surgery.



Figure1- Thenar atrophy