



Myofascial manipulation to alleviate forearm and hand weakness and numbness in a female competitive rock climber

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BACKGROUND AND PURPOSE:

Distal nerve entrapments can occur in multiple places in the upper extremity causing symptoms of numbness, tingling, and weakness in the distribution of the nerve entrapped. There is very limited research on the presence of weakness and numbness in the upper extremity as a result of muscular tightness and fascia restriction.

The purpose of this case report is to describe the effectiveness of myofascial manipulation along with therapeutic exercise on a patient with weakness, numbness, and tingling in the distal upper extremities in order to return to competitive rock climbing.

CASE DESCRIPTION:

The patient is a 20-year-old female competitive rock climber reporting a 3 week period of numbness and weakness in both upper extremities that coincided with an increase in resistance training for rock climbing.

Table 1: Examination Findings

		Evaluation
Outcome Measures	UEFI	32/80 (40%)
	Dead-hang time	0 seconds
Strength	Grip Strength R	23 lbs.
	Grip Strength L	18 lbs.
Range of Motion (Active Extension - Right)	2nd MTP/PIP	-20 / -16
	3rd MTP/PIP	-20 / -15
	4th MTP/PIP	-15 / -8
	5th MTP/PIP	-22 / -12
Range of Motion (Active Extension - Left)	2nd MTP/PIP	-24 / -12
	3rd MTP/PIP	-20 / -18
	4th MTP/PIP	-21 / -10
	5th MTP/PIP	-28 / -15

METHODS:



The two myofascial techniques above were used during the first 3 treatments after a period of active warm up. After the third treatment, these techniques were no longer indicated, as the patient no longer presented with symptoms of fascial restrictions. Below is a table explaining the supplemental interventions used along with the manual techniques.

Table 2: Weekly Therapeutic Exercise and HEP

Week 1	Self stretch to finger flexors
Week 2	Self stretch to finger flexors, TB resisted wrist flexion and extension, isometric holds with tennis ball
Weeks 3-5	Self stretch to finger flexors, resisted wrist flexion and extension, grip strengthening with isometric holds and ball squeezes, lat pull downs, resisted rows, chest press, push-ups, short duration dead-hangs, and squats. Patient instructed to begin climbing activities gradually
Week 6	All previous exercises increased in resistance. Continue as HEP 3 times per week along with normal training routine

RESULTS:

Table 3: Weekly Assessment Outcomes

	Outcome Measures		Strength	
	UEFI	Dead-hang time	Grip Strength R	Grip Strength L
Week 1	32/80	0 seconds	23 lbs.	18 lbs.
Week 2	47/80	0 seconds	28 lbs.	26 lbs.
Week 3	68/80	10 seconds	40 lbs.	48 lbs.
Week 4	76/80	3 minutes	61 lbs.	57 lbs.
Week 5	78/80	6 minutes	70 lbs.	70 lbs.
Week 6	80/80	7 minutes	71 lbs.	70 lbs.

CONCLUSION:

The use of myofascial manipulation to reduce neural pressure in the anterior forearm decreased neural symptoms and allowed for restoration of full range of motion and grip strength, allowing the patient to return to full participation in sport and work. The use of these myofascial techniques for three weeks, along with therapeutic exercise for a total of 6 weeks reduced all symptoms. It is also worth noting that the UEFI may not be the most appropriate outcome measure for patients who fall into this population, due to changes that exceed MCID without other, sport-specific, changes that show clinically important differences.

REFERENCES:

