

Combined Carpal Tunnel Release and Palmar Fasciectomy for Dupuytren's Contracture Does Not Increase the Risk for Complex Regional Pain Syndrome

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Introduction

- Early observational studies of concurrent surgical treatment of carpal tunnel syndrome (CTS) with carpal tunnel release (CTR) and Dupuytren's contracture (DC) with palmar Fasciectomy (PF) suggest that there is an increased risk for developing complex regional pain syndrome (CRPS)
- A survey of hand surgeons demonstrated that only half would be willing to perform surgical treatment of each condition simultaneously, given the concerns for development of CRPS³
- The aim of this study is to assess whether simultaneous surgical treatment of DC and CTS results in an increased incidence of CRPS

Methods

- A database of unique, de-identified patients was built from the Indiana Network for Patient Care using all patients who underwent treatment for DC or CTS, based on Current Procedural Terminology (CPT) codes, from April 1982 through March 2017
- Study groups were:
 - CTR only = CPT 64721 or 29848
 - PF only = CPT 26125, 26123, 26121, or 26045
 - Concurrent = CTR & PF on same encounter
- Comorbidities were recorded and patients were followed for 1 year for development of CRPS

Results

- A total of 54,147 patients met inclusion criteria
 - 51,739 (95.6%) patients had CTR only
 - 2,103 (3.9%) patients had PF only
 - 305 (0.6%) had concurrent CTR & PF
- There were demographic differences between groups (Table 1)
- Concurrent surgery was not a risk factor for CRPS (Table 2)
- 298 (0.58%) of CTR only developed CRPS
- 7 (0.33%) of PF only developed CRPS
- 3 (0.98%) of the concurrent developed CRPS
- Independent risk factors for CRPS were younger age, anxiety, depression, epilepsy, gout, and radius, ulna, or wrist fracture (Table 2)

Table 1. Patient Demographics

	CTR only Patients (%)	PF only Patients (%)	Concurrent Patients (%)
Sex			
Female	35,266 (68.4)	658 (31.4)	146 (48.0) ^{a,b,c}
Male	16,305 (31.6)	1,440 (68.6)	158 (52.0)
Race			
White	18,386 (85.6)	502 (89.5)	119 (93.7) ^{a,b}
Non-white	3,092 (14.4)	59 (10.5)	8 (6.3)
Age (years)			
Mean (±SD)	51.2 (±14.6)	58.3 (±14.0)	57.9 (±11.7) ^{a,b}

^ap<0.05 for CTR only versus PF only
^bp<0.05 for concurrent versus CTR only
^cp<0.05 for concurrent versus PF only
 SD, standard deviation; OR, odds ratio

Table 2. Risk Factors for Developing CRPS after Surgery

	Adjusted OR	p
Type of Surgery		
CTR only		
PF only	0.087	0.581
Concurrent Surgery	1.854	0.293
Sex		
Male		
Female	1.076	0.587
Race		
Non-white		
White	0.741	0.170
Age	0.987	0.008
Comorbidities		
Alcohol abuse	1.237	0.249
Anxiety	1.498	0.003
Depression	1.777	<0.001
Diabetes	1.001	0.993
Epilepsy	1.520	0.032
Fibromyalgia	0.854	0.632
Gout	1.718	0.004
Hypercholesterolemia	0.965	0.810
Hyperlipidemia	0.796	0.133
Hyperparathyroidism	0.496	0.231
Multiple Sclerosis	1.179	0.672
Osteoarthritis	1.204	0.167
Finger fracture	0.688	0.260
Hand Fracture	0.854	0.660
Radius/Ulnar fracture	1.495	0.050
Wrist fracture	1.665	0.044
Wrist sprain	1.386	0.070

Conclusion

- Concurrent CTR and PF does not increase the likelihood for developing CRPS
- Factors associated with CRPS after surgery include younger age, anxiety, depression, epilepsy, gout, and forearm/wrist fractures
- Based on these data, we recommend simultaneous surgery for patients with CTS and DC after an informed discussion of the risk of CRPS in the at-risk population

References

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