Increased Risk of Dupuytren’s Contracture Following Distal Radius Fracture

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INTRODUCTION: Dupuytren's Contracture (DC) is a progressive disorder of the palmar fascia that causes finger contracture and impaired hand function. While trauma and aging are known to be potential triggers, the link between DC and distal radius fractures (DRF) remains underexplored. The purpose of this study was to identify the cumulative incidence and odds of developing DC after DRF that necessitated treatment within 5-years.

METHODS: The TriNetX database was utilized for this retrospective cohort study. Patients with DRF were identified using ICD and CPT codes. Propensity matching was performed, 1:1 between the control and DRF cohort. The rates of DC diagnosis and subsequent treatment were evaluated for both the control and study groups. Outcomes were reported as cumulative incidence rates (CIR), odds ratios (OR) and 95% confidence intervals (CI).

RESULTS: In total, 423,972 patients were included. Compared to matched controls, patients with DRF had significantly higher odds of DC diagnosis (OR: 6.1; 95% CI: 4.9 to 7.6; P<0.001), and were more likely to undergo an open procedure (OR: 4.1; 95% CI: 2.1 to 8.2; P<0.001), or any DC intervention (OR: 5.5; 95% CI: 2.9 to 10.4; P<0.001) when compared to non-DRF controls. These associations remained significant when excluding patients with prior DRFs.

DISCUSSION AND CONCLUSION: This large database study found that cumulative incidence and odds of DC are significantly higher within 5-years of sustaining a DRF compared with age-matched controls. These findings suggest that injury related trauma may contribute to higher rates of fibrosis, collagen dysregulation and connective tissue changes, increasing patients risk of developing DC. This association highlights the risks of trauma and may inform surgeon-patient discussions surrounding the natural history of traumatic injuries of the hand and wrist.

Table 1: Demographics of DRF and control cohorts

	DRF		No DRF Control		P-Value
	n	%	n	%	-
Total	88,935	-	88,935	-	-
Age	41.8 +/- 26.6	-	41.8 +/- 26.6	-	1.000
Sex (Male)	38,623	43.43%	38,623	43.43%	1.000
Female	50,275	56.53%	50,275	56.53%	1.000

Table 2: Cumulative Incidence Rate and Measures of Association Subanalysis Between DRF and control cohorts

Outcome	DRF CIR (%)	Control CIR (%)	Odds Ratio	95% Confidence Interval	P-Value
Dupuytren's Dx	0.2	0.045	4.46	3.16 to 6.27	**<0.0001**
Collagenase Injection (20527)	-	-	-	-	-
Fasciotomy (26040)	-	-	-	-	-
Open Procedures (26121, 26045, 26123, 26125, 26596	0.015	0.011	1.3	0.57 to 2.97	0.5316
Any Intervention (Of 3 Listed Above)	0.026	0.011	2.3	1.095 to 4.832	**0.0236**

DRF: distal radius fracture; CIR: Cumulative incidence rate

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