

Comparative Outcomes Of Single Versus Multiple Trigger Finger Releases: A Propensity Score Matched Cohort Study

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Introduction

- Trigger finger (TF) release is one of the most common procedures in hand surgery.¹
- Lifetime incidence is 3% of the general population.²
- There is no clear data regarding outcomes of single versus multiple trigger finger releases in an operation.
- Complications include infection, dehiscence, persistent triggering, limited range of motion, synovitis, adhesions, bowstringing, scarring, and digital nerve injury.³

Clinical question:

Does trigger finger release of single versus multiple digits affect patient outcome?

Methods

- Retrospective propensity-matched cohort study obtaining TriNetX data including patients undergoing single versus multiple trigger finger release between 2010 - 2025.

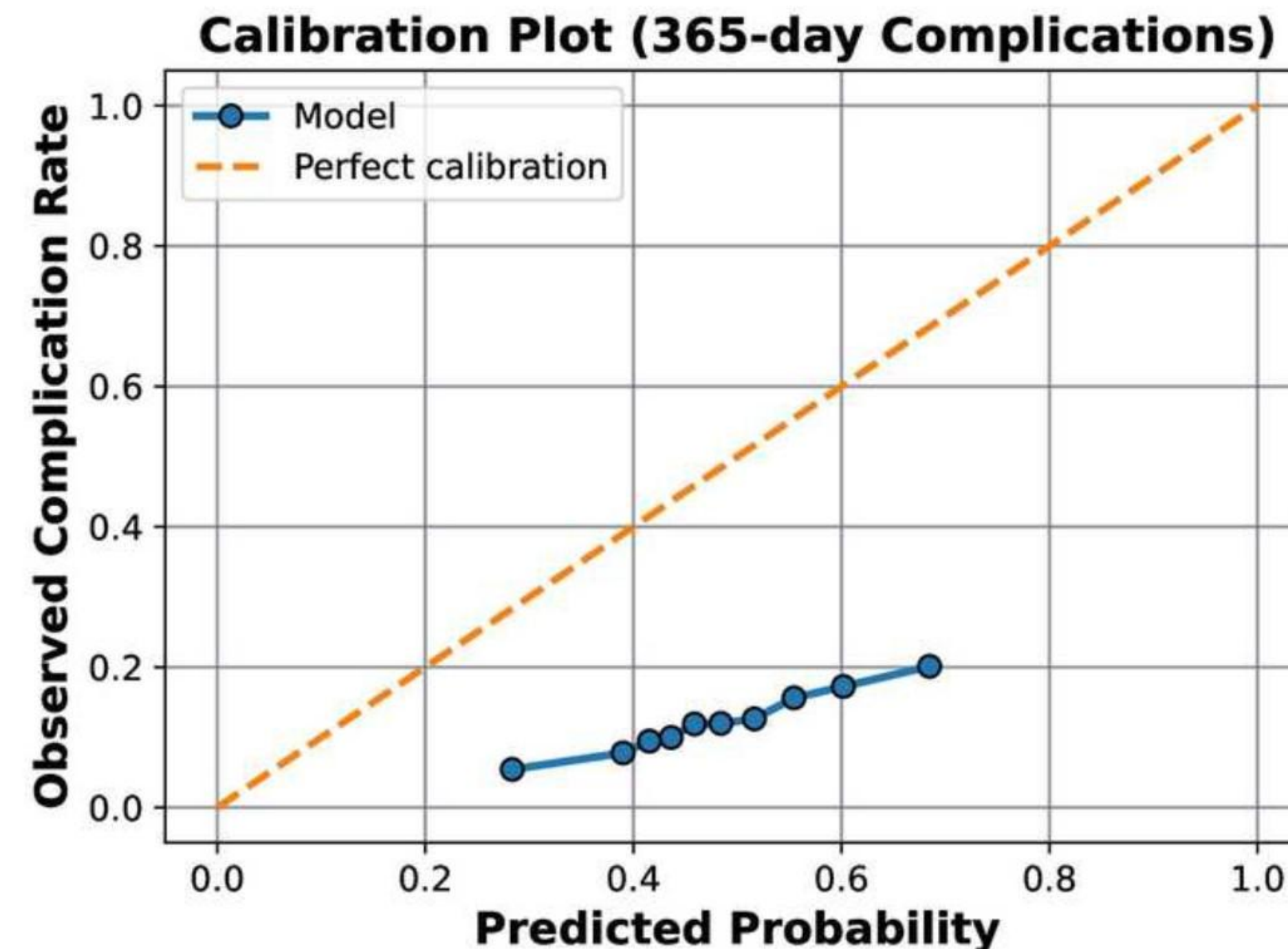
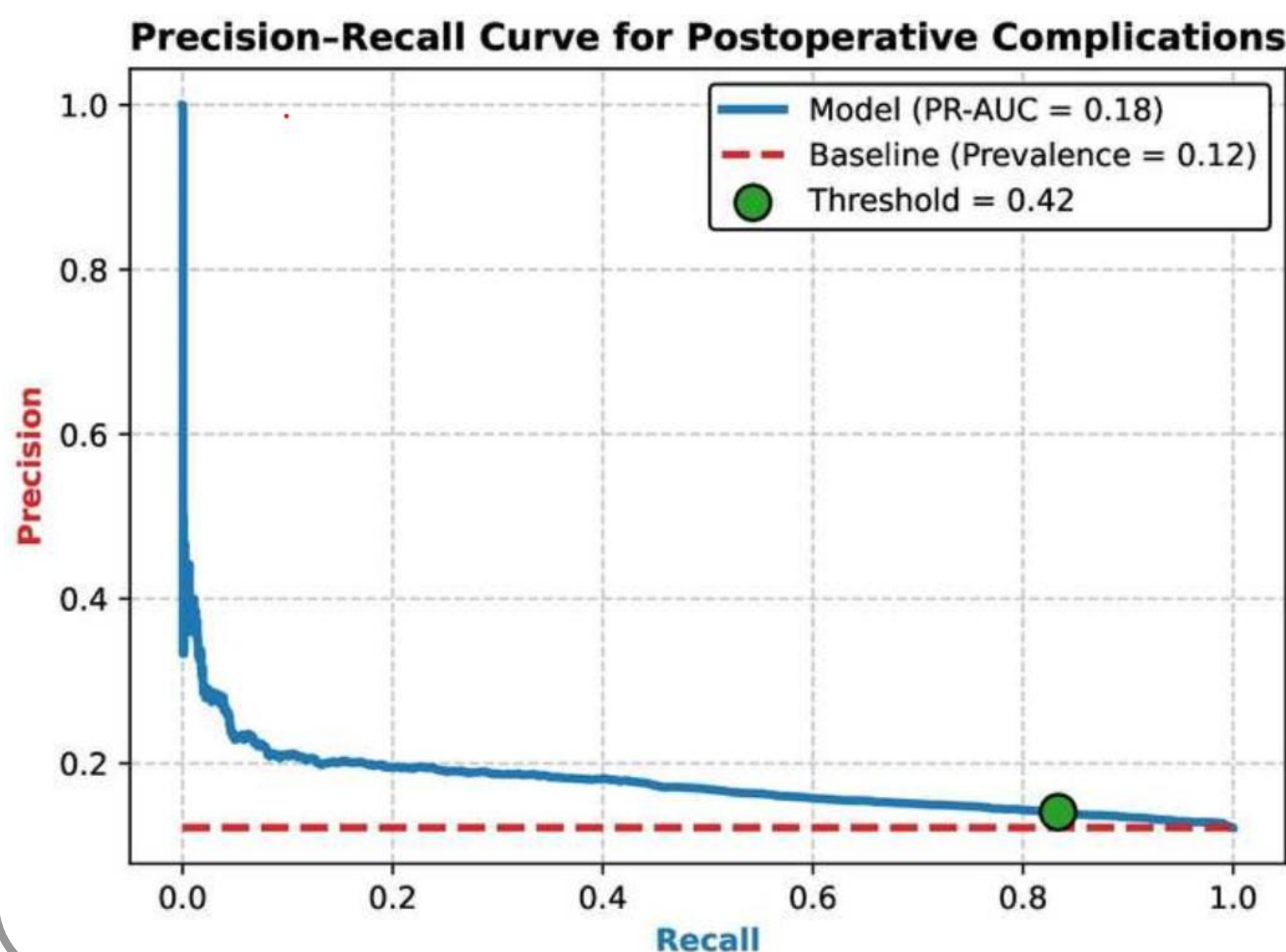
	Cohort With Single Trigger Finger Release	Cohort With Multiple Trigger Finger Release	Std Diff	p Value
	After matching			
No. of patients	48,840	48,840	—	—
Mean current age, yrs	65.4 ± 16.8	64.0 ± 17.2	0.087	<0.0001
Age at index, yrs	59.0 ± 17.1	59.0 ± 17.2	0.001	0.8715
Sex (n, %)				
Female	31,360 (64.2%)	31,350 (64.2%)	0.0004	0.9521
Male	17,478 (35.8%)	17,490 (35.8%)	0.0005	0.9414
Unknown gender	2 (0.0%)	0 (0.0%)	0.009	0.4999
Previous conditions (n, %)				
Diabetes mellitus	10,137 (20.8%)	10,133 (20.7%)	0.0002	0.9811
Overweight and Obesity	7,726 (15.8%)	7,751 (15.9%)	0.0014	0.8334
Nicotine Dependence	3,311 (6.8%)	3,307 (6.8%)	0.0003	0.9695

Table 1. Baseline Patient Characteristics After Propensity Score Matching.

Results

	Single Release Cohort (n=48,840) Patients with Outcome (n, %)	Multiple Release Cohort (n=48,840) Patients With Outcome (n, %)	Risk Difference	95% CI	Z-score	P-value	Risk Ratio	95% CI	Odds Ratio	95% CI
Delayed Wound Healing	487 (1.00%)	66 (0.14%)	-0.862%	(-0.96%, -0.77%)	-17.983	<0.0001	0.136	(0.10,0.18)	0.134	(0.10,0.17)
Pain	488 (1.00%)	938 (1.92%)	0.921%	(0.77%,1.07%)	12.013	<0.0001	1.922	(1.72,2.14)	1.94	(1.74,2.17)
Stiffness/Joint Contracture	1,478 (3.03%)	3,330 (6.82%)	3.792%	(3.52%,4.06%)	27.498	<0.0001	2.253	(2.12,2.39)	2.345	(2.20,2.50)
Flexor Tenolysis	390 (0.80%)	516 (1.06%)	0.258%	(0.14%,0.38%)	4.206	<0.0001	1.323	(1.16,1.51)	1.327	(1.16,1.51)
Complex Regional Pain Syndrome (CRPS)	0 (0.00%)	20 (0.04%)	0.041%	(0.02%,0.06%)	4.473	<0.0001	NA	NA	NA	NA

Table 2. Outcome Comparison Between Patients with Single and Multiple Trigger Finger Release (Risk Difference, Risk Ratio, and Odds Ratio with 95% Confidence Intervals)



- At a selected probability threshold of 0.42, the model achieved a sensitivity of 0.83, specificity of 0.29, and precision of 0.14.
- Calibration demonstrated appropriate risk ordering with modest underestimation of absolute risk at higher probabilities, while decision curve analysis showed small but consistent net benefit across clinically relevant thresholds.

Summary

- A predictive model was developed to identify patients at risk for postoperative complications within 1 year after trigger finger release.
- Increased age, African American race, nicotine dependence, obesity, diabetes mellitus, rheumatoid arthritis and multiple digit release were independently associated with higher odds of postoperative complications within 1 year from the index surgery.

Future Directions/Conclusions

- Patients undergoing multiple trigger finger release experienced higher rates of postoperative pain, stiffness, and subsequent flexor tenolysis.
- This may be explained by multiple concurrent procedures leading to higher risk of overall complications, and surgeons should be mindful of this prior to surgical intervention.

References

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Acknowledgments

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