Obesity is a Risk Factor for Trigger Finger

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INTRODUCTION: Trigger finger (TF) results in pain and functional impairment. It has been previously associated with carpal tunnel syndrome, which in turn has been associated with obesity. This study investigated the relationship between obesity and TF prevalence to determine if patients with obesity are at an increased risk of developing TF.

METHODS: A retrospective analysis was performed using data from 3,737,723 patients obtained from TriNetX Research Network. Patients with known risk factors for the development of TF (rheumatoid arthritis, gout, amyloidosis, spontaneous rupture of flexor tendons in the forearm, previous endoscopic or open carpal tunnel release, hypothyroidism, Dupuytren's, infectious tenosynovitis, or type 1 diabetes mellitus) except type 2 diabetes (T2DM) were excluded from the initial database query. Two cohorts were created: (1) those with a TF diagnosis and (2) those without. Individuals without complete data available were excluded. Next, the two groups were subjected to a 1:1 nearest neighbors propensity match for T2DM diagnosis and other covariates, to reduce the potential for confounding variables between groups (**Figure 1**). Multiple linear regression on TF status, BMI, and matched covariates was used to estimate an adjusted comparison of means to account for residual confounding effect from covariates after propensity matching. After matching, each group contained 65,289 patients, and statistical analyses were completed. Paired t-tests were used to detect differences in BMI between groups. McNamar's Test was used to detect a difference between the prevalence of TF in patients with and without obesity. Risk and odds ratios were calculated to estimate the difference in TF prevalence in those with obesity. An adjusted calculation of both ratios was estimated using a multiple logistic regression on TF status, obesity status, and matched covariates to account for residual confounding group variability.

RESULTS: Among included patients (n=130,578), the prevalence of TF was positively associated with increasing BMI and prevalence of obesity (**Figure 2**). Multiple linear regression concluded that BMI accounts for a small portion of the variance observed in TF prevalence ($R^2 = 0.0023$, $p < 0.001$). Paired t-tests identified that the TF group had a higher BMI than the non-TF group ($p < 0.001$). Adjusted risk and odds ratios for TF with a concurrent diagnosis of obesity were 1.08 95% CI [1.07, 1.09] and 1.17 95% CI [1.14, 1.20], respectively.

DISCUSSION AND CONCLUSION:

The prevalence of TF is correlated with increasing BMI. Patients a BMI ≥ 30 kg/m^2 (obese) have a 7-8% increased risk of developing TF compared to patients with a BMI < 30 kg/m^2 (not obese). These findings support that obesity is an independent risk factor for TF development.