2021 Annual Conference Abstract Submission

PRESENTATION TITLE:
The 5-Factor Modified Frailty Index as a Predictor of Complications following Total Ankle Arthroplasty

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Yes

LIST ANY DEVICES NOT CURRENTLY APPROVED FOR USE BY THE FDA:
n/a

STRUCTURED ABSTRACT (PURPOSE, METHODS, RESULTS, AND CONCLUSIONS) IN LESS THAN 400 WORDS:

PURPOSE: Ankle arthritis is a significant cause of decreased function and quality of life, especially in the elderly. Total ankle arthroplasty (TAA) is one of the primary surgical treatment options for end-stage ankle arthritis. Research is still ongoing to determine which patients are at a higher risk of post-operative complications. A 5-item modified frailty index (mFI-5) has recently been developed and found to predict adverse outcomes of multiple orthopaedic procedures. We hypothesized that the mFI-5 would similarly predict patient outcomes following TAA.

METHODS: A retrospective review of the National Surgical Quality Improvement Program (NSQIP) database was performed on patients undergoing TAA between the years of 2011 and 2017. Data on patient demographics, post-operative complications, length of stay, readmission and reoperation rates, and discharge destination were collected. Bivariate and multivariate statistical analyses were subsequently performed to investigate frailty as a possible predictor of post-operative adverse outcomes.

RESULTS: 1028 patients were identified (mean age, 63.9 years). Bivariate analysis demonstrated that patients with an mFI-5 score of >2 were more than 4 times as likely to develop a post-operative complication compared to patients with an mFI-5 score of 0 (19.38% versus 5.24%; p-value <0.0001). When broken down by specific complications, mFI-5 score of >2 was also significantly associated with wound complications. Similarly in these patients, rate of readmission increased from 0.24% to 3.1% (p-value

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0.017), length of stay increased from 1.79 days to 2.18 days (p-value 0.007), and adverse discharge rates increased from 3.81% to 15.5% (p-value <0.0001). Even after controlling for patient demographic factors, length of stay, and operative time in multivariate analysis, frailty score was still found to significantly correlate with one's risk of developing any complication (p-value 0.03) as well as 30-day readmission rate (p-value 0.005).

CONCLUSIONS: Frailty is an effective predictor of adverse outcomes following TAA. Implementing the mFI-5 as a risk stratification tool may assist in identifying patients who are at an elevated risk of sustaining a complication and can allow for improved informed decision-making and perioperative care.