Association of a Modified Frailty Index with Postoperative Outcomes after Ankle Fractures in Patients Aged 50 Years and Older

Rishin Kadakia, MD, Jason Bariteau, MD, Catphuong Vu, BA, Andrew Pao, MD, Shay Tenenbaum, MD

Category: Ankle, Trauma

Keywords: Geriatric, Ankle, Trauma, Fracture, Outcomes, Frailty

Introduction/Purpose: Frailty, a multifaceted syndrome resulting from a decrease in physiologic reserves, has been previously shown to play a significant role in elderly morbidity and mortality. The literature on frailty within orthopaedic surgery is limited currently. No study to date has assessed frailty as a predictor of postoperative outcomes in elderly patients with ankle fractures. We hypothesized that increasing frailty would be associated with increased 30-day reoperation rates and increased postoperative complications.

Methods: The National Surgical Quality Improvement Project (NSQIP) was queried using the appropriate CPT codes to identify inpatients from 2005-2014 who were aged 50 years and older that sustained an ankle fracture and underwent operative fixation. Frailty was assessed using a modified frailty index (MFI), abbreviated with 11 variables from the Canadian Study of Health and Aging Frailty Index. The primary outcome was 30-day reoperation rate and secondary outcomes were postoperative surgical and medical complications, readmission rates, and length of stay. Bivariate and multivariate analysis was used to determine association between outcomes and MFI.

Results: 6,749 patients were identified, and the mean age of these patients was 64.4 years. Patients with increased MFI scores had significantly higher rates of postoperative complications. In addition, increased MFI scores was also associated with increased 30 day readmissions and reoperations. Multivariate analysis also demonstrated that MFI was a stronger predictor of 30 day reoperation rates (odds ratio of 17.7, P < 0.001) than age, wound class, and ASA class.

Conclusion: Frailty has the potential to be an important predictive variable of postoperative outcomes in patients aged 50 years and older who sustain ankle fractures. The modified frailty index can be a valuable preoperative risk assessment tool for the orthopaedic surgeon. Further study is necessary to examine the effect of the MFI in a larger prospective setting.

Foot & Ankle Orthopaedics, 2(3)
DOI: 10.1177/2473011417S000225
©The Author(s) 2017

This open-access article is published and distributed under the Creative Commons Attribution-NonCommercial 3.0 License (http://www.creativecommons.org/licenses/by-nc/3.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage).