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Title

The 5-item modified frailty index is predictive of postoperative complications in elderly patients undergoing surgical management of distal radius fractures

Purpose

Compared to cast treatment, surgery may expose elderly patients with distal radius fractures to undue risk. Surgical intervention in this cohort may offer less benefit than previously thought and appropriate patient selection is imperative. The modified frailty index (mFI) predicts complications after other orthopedic surgeries. We hypothesized that this index would predict, and might ultimately prevent, complications in elderly patients with distal radius fractures.

Methods

We retrospectively reviewed the ACS-NSQIP database, including patients older than 50 who underwent open reduction and internal fixation of a distal radius fracture. 5-item modified frailty index scores were then calculated, and postoperative complications were noted. Traditional statistical analysis was then performed.

Results

6494 patients were identified (mean age = 65). When compared to patients with mFI =0, patients with mFI ≥ 2 were nearly 2.5 times as likely to incur a postoperative complication (1.7% to 7.4%; $p < 0.001$). Frailty was associated with increased complications even when controlling for demographic data, LOS, and operative time (OR 2.46, 95% CI 1.57-3.87, $p < 0.001$). Specifically, the rate of Clavien-Dindo IV, wound, cardiac, and renal complications increased significantly with increasing mFI ($p < 0.001$, $p = 0.024$, $p = 0.01$, and $p = 0.001$, respectively). Age alone was not significantly associated with postoperative complications.

Conclusion

Frail state is highly predictive of post-operative complications following ORIF of DRFs. Our data suggests that a simple frailty evaluation can help inform the decision to operate on or cast elderly patients with distal radius fractures.