A Modified Frailty Index Predicts Complications Following Pedicle Subtraction Osteotomy

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Background

•Frailty, a common geriatric syndrome, predisposes patients to poor surgical outcomes.

•Developed a modified 8-item index for frailty assessment before orthopedic procedures.

•Study focuses on assessing the prognostic value of the Modified Frailty Index (MFI) in Pedicle Subtraction Osteotomy, considering the known predictive power of frailty indices for postoperative morbidity and mortality.

•Current models lack vital prognostic measures (nutrition status, obesity, osteoporosis), prompting the design of the MFI to enhance orthopedic surgery risk assessment by incorporating these crucial factors.

Methods

•Assessed 339 PSO patients using the American College of Surgeons - National Surgical Quality Improvement Program (ACS - NSQIP).

•MFI includes eight comorbidities: severe obesity, osteoporosis, non-independent function, congestive heart failure, hypoalbuminemia, hypertension, diabetes, and COPD/pneumonia history.

•Patients categorized into MFI classes (0 to 3) based on comorbidity count.

•Multivariate regression to assess MFI class predictive value on postoperative outcomes.

Results

•MFI class strongly predicts outcomes.

•Higher MFI associated with greater odds for:

- •Adverse discharge (OR 7.99; p=0.046)
- •Reoperation (OR 16.38; p<0.001)
- •Grade IV complications (OR 13.18; p=0.004)
- •Renal complications (OR 9.40; p=0.024)
- •Sepsis (OR 8; p=0.046)
- •Surgical site infections (OR 9.71; p=0.021)
- •Unplanned intubation (OR 12.41; p=0.006)

Conclusion

•MFI predicts outcomes in PSO effectively.

•Highlights the need to assess comorbidities and frailty before spine surgery.

•MFI is a simple yet effective tool for screening frailty levels and risk stratification.

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