Evaluating Clinical Outcomes Following Elective Ventral Hernia Repairs for Patients with Advanced Age and Frailty

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Background

- Around 350,000 elective ventral hernia repairs (EVHR) are performed annually in the US and approximately 40% (116,000) of EVHRs are in patients over the age of 60
- Data shows that EVHR in older patients improves quality of life, but may be associated with higher perioperative risks
- The revised-RAI (RAI) score is a validated measurement of clinical frailty and has been shown to predict perioperative risks, but has not been specifically studied in predicting outcomes in geriatric patients undergoing EVHR
- Our study seeks to evaluate post-op outcomes in elderly patients undergoing EVHR and examine the impact of their RAI score

Methods

- A single institution retrospective review was conducted of all patients undergoing EVHR from 2022 to 2024 at our tertiary care center
- Demographic data, RAI scores, operation details, and post-op outcomes were collected
- Exclusion criteria included those with hernias <1 cm, emergent repairs, and repairs that were done concurrently with other abdominal surgeries
- Post-op adverse events was the primary outcome examined, defined as any wound complications requiring intervention, acute end-organ failure, mortality, ICU admission, 90-day hospital readmission, or 30-day mortality
- Secondary outcomes included hospital length of stay (LOS), discharge to skilled nursing facility (SNF), and hernia recurrence
- Elderly patients in this study was defined as age ≥60, and frailty was defined as RAI ≥37
- Categorical values were compared with chi-square tests, and continuous variables with t-tests

Results

- 208 patients met inclusion criteria: n=80 ≥60 years and n=128 <60 years.
- Patients ≥60 years demonstrated higher postoperative complication rates compared with younger patients (20% vs 11%, p = 0.07).
- The ≥60 group had significantly longer length of stay (1.81 vs 0.98 days, p = 0.037) and were more likely to require ICU admission (3.8% vs 0%, p = 0.027)
- Discharge to skilled nursing facility (SNF) occurred only in patients ≥60 years (2.5% vs 0%, p = 0.07), while hernia recurrence rates were similar between groups (5% vs 4.7%, p = 0.92).
- Among patients ≥60 years with documented RAI scores (n = 45), 10 (22%) were classified as frail. Frail patients did not demonstrate significant differences in LOS (2.11 vs 1.71 days, p = 0.402) or overall adverse outcomes (30% vs 12%, p = 0.166) compared with non-frail patients

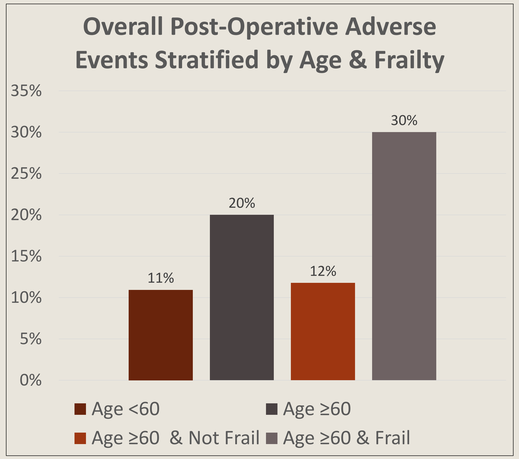

Figure 1: Overall adverse events were more common in patients ≥60 and those classified as frail.

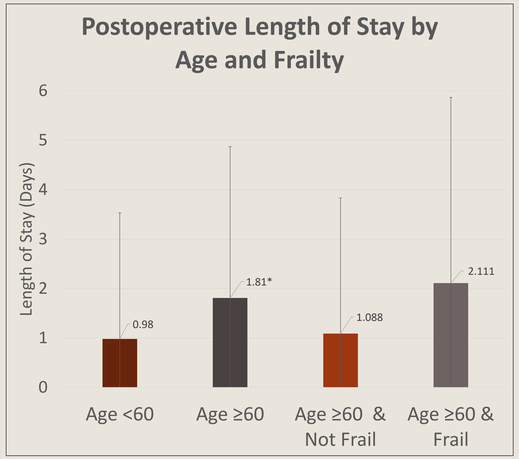

Figure 2: Patients ≥60 years had longer postoperative length of stay (p=0.037).

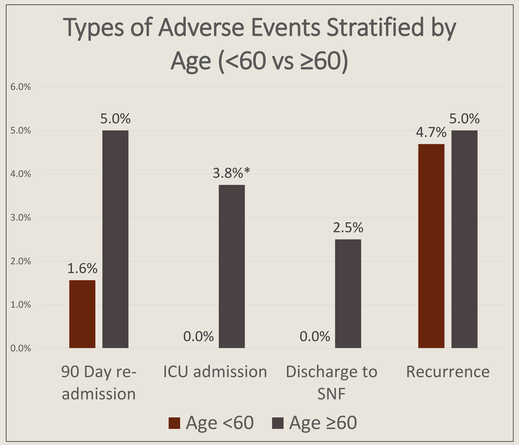

Figure 3: ICU admission was more frequent in patients ≥60 (p=0.027).

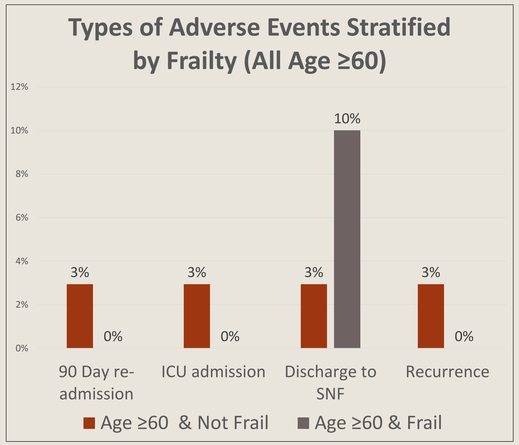

Figure 4: No significant differences in adverse events were observed in those with a frailty status.

Conclusions

- Risk of post-op adverse events was higher in patients age >60 undergoing elective ventral hernia repair
- ICU admissions and LOS were significantly higher in patients older than 60
- The small number of high-frailty elderly patients undergoing EVHR in this study likely reflects preoperative selection decisions regarding clinical risks in this population
- Frailty (as determined by RAI score ≥37) was associated with a non-statistically significant trend toward higher adverse events and discharge to SNF

Implications for Practice

- Overall, EVHR in elderly patients is associated with a higher risk of hospital readmission, ICU admission, discharge to SNF, and prolonged hospital stay
- This study helps us quantify some of the increased risks associated with undergoing EVHR in elderly patients, which should guide preoperative counseling and shared decision-making in this population
- Incorporating RAI frailty scoring into preoperative evaluation may enhance shared decision-making and informed consent discussions

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