

FACTORS INFLUENCING RETURN TO DRIVING AFTER ROBOTICALLY ASSISTED CARDIAC SURGERY

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Introduction

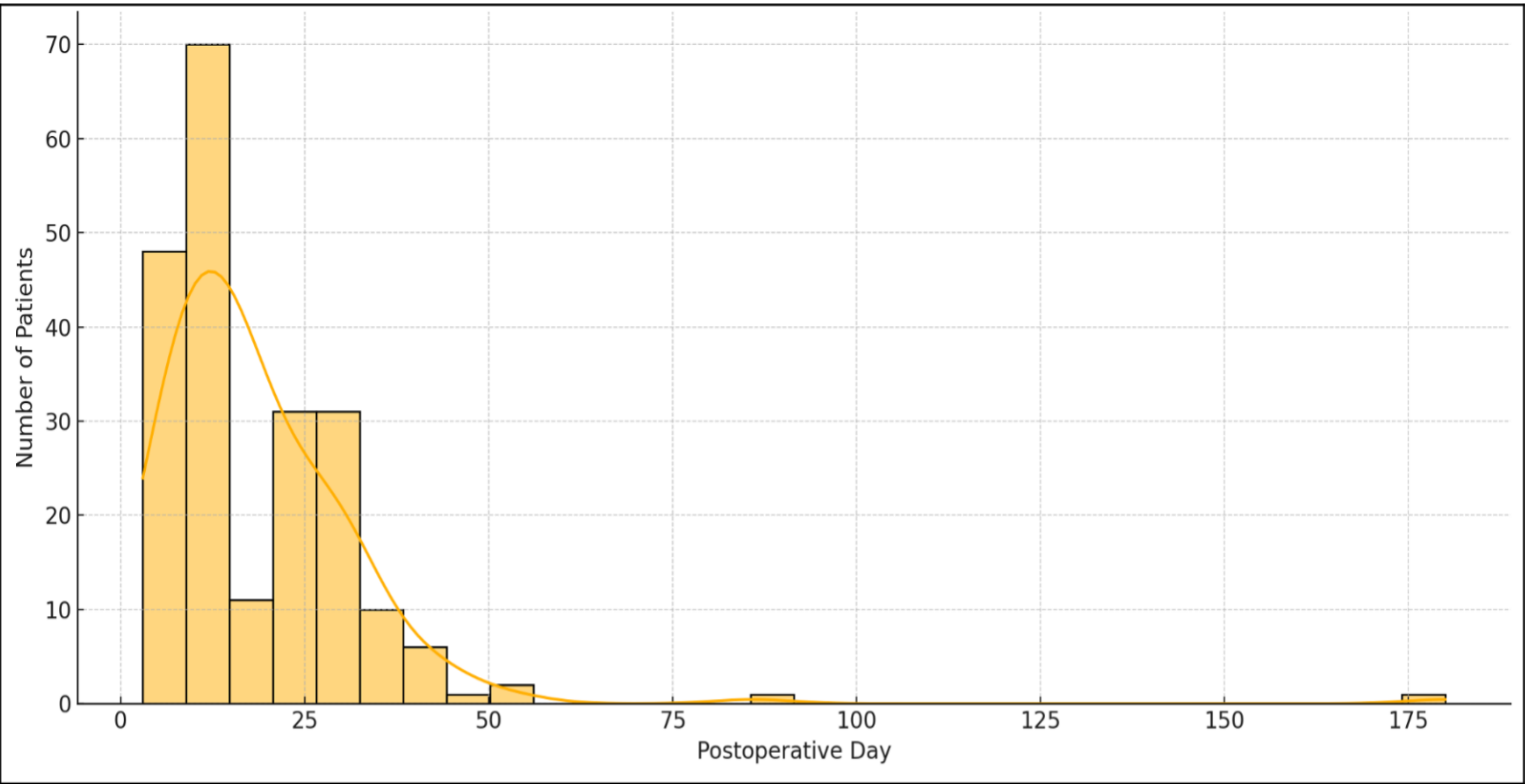
- Patients undergoing median sternotomy are restricted from driving for at least four weeks.
- Robotically assisted cardiac surgery preserves sternal integrity and may enable earlier return; however, data on timing and predictors remain limited.
- This study examined factors associated with earlier driving resumption following robotic cardiac procedures.

Methodology

- Between July 2021 and December 2024, 232 patients underwent robotically assisted mitral or coronary surgery and had follow-up data available at four weeks.
- The cohort included 124 patients (53.4%) who underwent robotic mitral valve repair and 108 patients (46.6%) who underwent robotic coronary revascularization (either minimally invasive direct coronary artery bypass [MIDCAB, N=29] or totally endoscopic coronary artery bypass [TECAB, N=79]).
- The median age was 64 [range 24–85] years; 71.6% were male and 28.4% were female.
- According to our institutional protocol, patients were cleared to resume driving once they were independently mobile and no longer required narcotic analgesia.
- Postoperative follow-up occurred at approximately 4 weeks, at which point driving status was retrospectively assessed.
- Clinical, procedural, and recovery-related variables were analyzed to identify predictors of early return to driving.

Results

- At the time of four-week follow-up, 202 patients (87.1%) had resumed driving, while 30 (12.9%) had not.
- Notably, 55.7% of patients had already resumed driving by postoperative day 14 (Figure 1).
- On univariate analysis, female patients (p=0.001), patients with intraoperative technical challenge (p=0.038), conversion to sternotomy (p<0.001), red blood cell transfusion (p=0.016), and increased hospital length of stay (p=0.034) had a statistically significant delayed return to driving.
- At multivariate analysis, postoperative length of stay (p=0.037) and red blood cell transfusion (p=0.034) were independent predictors of delayed return to driving.



Conclusion

- Almost 9 out of 10 patients undergoing robotically assisted cardiac surgery resume driving within four weeks, with more than half returning as early as 2 weeks postoperatively.
- Increased hospital length of stay and the need for red blood cell transfusion are independent predictors of delayed return to driving.
- Robotic approaches, by preserving sternal integrity, may support earlier functional recovery compared with expectations based on sternotomy practice.
- Return to driving may serve as a valuable surrogate variable for enhanced recovery in robotically assisted minimally invasive cardiac surgery and should be included in comparative studies.

Key References

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