Does a Delay to Surgery for Preoperative Echocardiogram Affect Outcomes in Hip Fracture Patients?

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Purpose: Our objective was to examine whether preoperative echocardiogram work-up affects time to surgery, complications, and mortality following operative fixation for hip fracture, and secondarily assess the adherence to ACC/AHA (American College of Cardiology/American Heart Association) guidelines for echocardiogram indications.

Methods: Our institutional hip fracture registry was retrospectively reviewed for inclusion over a 2-year period. Patients who had an echocardiogram (yECHO) for preoperative clearance were compared to those without echocardiogram (nECHO). Demographic data, time to surgery, overall complication rate, and mortality at 30 days, 90 days, and 1 year were recorded. The adherence of echocardiograms meeting ACC/AHA guidelines was also evaluated.

Results: Two cohorts consisted of 136 yECHO patients (45.8%) and 161 nECHO patients (54.2%). 32 yECHO patients (23.5%) had aortic stenosis (AS). Most notably, only 26 of 136 yECHO patients (19%) had obtained preoperative echocardiograms that adhered to ACC/AHA guidelines. Patients in the yECHO group were more likely to have a complication rate for any cause compared to nECHO patients (25.7% vs 10.6%, P = 0.01) and had significantly higher mortality rate at 1 year (38.9% vs 17.4%, P = 0.001). There was no association between AS and all-cause complication (P = 0.54) or 30-day (P = 0.13) or 90-day mortality rates (P = 0.79). However, patients with AS had a significantly higher mortality rate at 1 year (45.8% vs 25.1%, P = 0.03).

Conclusion: This study reinforces the benefits of ensuring less than a 24-hour time to surgery in the setting of a hip fracture and identifies an area of preoperative management that can be further optimized to prevent unnecessary prolongation in time to surgery. Patients with known aortic stenosis are not associated with increased 30-day or 90-day mortality or all-cause complications. Surgical delays in the yECHO cohort were attributed to preoperative medical assessments including echocardiograms and the management of comorbidities. Therefore, the selective utilization of preoperative echocardiograms is needed, especially strict adherence to ACC/AHA guidelines, and should be reserved to ensure they have a definitive role in guiding the perioperative care of hip fracture patients.