

Does a Delay to Surgery for Preoperative Echocardiogram in Patients With Known Aortic Stenosis Affect Outcomes in Hip Fracture Patients?

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Purpose: The high mortality rate in hip fracture patients is well documented in the literature. Time to surgery has been shown to directly influence 30- and 90-day mortality rates when left untreated for longer than 24 hours. The majority of these patients have multiple comorbidities that may delay timing to surgery in order to optimize the patient for surgery. The purpose of this study is to examine whether preoperative echocardiogram use or cardiac work-up in the setting of known aortic stenosis affects time to surgery and if there is an increased rate of complications/mortality within this patient population.

Methods: Institutional hip fracture registry was screened for inclusion over a 2-year period. The patients who had preoperative echocardiogram (yECHO) for operative clearance were compared to those who did not (nECHO). ASA (American Society of Anesthesiologists) classification was factored in to determine if patients receiving preoperative echocardiograms were sicker at baseline. Delay to surgery, overall complication rate, inpatient mortality, and mortality at 30 days, 90 days, and 1 year were recorded. Statistical analysis was performed using SPSS 20.0, and included bivariate and multivariate analyses.

Results: Two cohorts consisted of 136 patients (45.8%) in the yECHO group and 163 patients (54.9%) in the nECHO group; 32 (23.5%) of the 136 patients had aortic stenosis and all received a preoperative echocardiogram. Patients in the yECHO cohort were more likely to have a complication than those in the nECHO cohort (25.7% vs 10.4%, $P = 0.001$). There was no association found between aortic stenosis and complication or mortality rate ($P = 1.00$). There was no significant difference in complication rate or mortality when controlling for ASA classification ($P = 0.37$).

Conclusion: When patients received an echocardiogram for preoperative evaluation or cardiac work-up for known aortic stenosis, the results suggest no association between mortality at any time point. Patients who did get a preoperative echocardiogram were more likely to have a complication after operative fixation of their proximal femur fracture, possibly due to a delay to surgery for clearance. There was no association found between patients with known aortic stenosis and complications or mortality suffered postoperatively. Our study suggests that operative fixation of hip fractures in patients with known aortic stenosis should not be delayed for obtaining a preoperative echocardiogram or cardiac work-up.