Mitral Valve Repair in a Regional Quality Collaborative: Respect or Resect?

Objective: Mitral valve repair is the gold standard for treatment of mitral regurgitation, but the optimal technique remains debated. Utilizing a regional collaborative, we sought to determine the change in repair technique over time, respective outcomes, and predictors of technique usage.

Methods: We identified all patients undergoing mitral valve repair from 2012-2022. Those with endocarditis, undergoing transcatheter repair, or other concomitant procedures including tricuspid intervention or atrial fibrillation ablation were excluded. Continuous variables were analyzed via two-way t-test and categorical variables via chi-square testing. Multiple regression was used to determine outcome predictors.

Results: We identified 1658 patients that underwent isolated mitral valve repair with 948 (57.2%) undergoing a leaflet sparing repair. Over the last decade, there was no significant trend in the proportion of repair techniques across the region via logistic regression (p=0.85). Those undergoing leaflet sparing repairs were more likely to be female (44.0% vs. 34.7%, p<0.001), African American (13.2% vs. 8.3%, p=0.002), redos (6.4% vs. 2.1%, p<0.001), undergo minimally invasive approaches (51.6% vs. 24.1%, p<0.001), and have higher predicted risk of morbidity or mortality (median 8.5% vs. 7.8%, p=0.004). Intraoperatively, leaflet sparing repairs were associated with both longer bypass (138 ± 43 vs. 127 ± 48 minutes, p<0.001) and cross clamp times (96 ± 32 vs. 90 ± 36 minutes, p<0.001) compared to leaflet resection repairs. Operative mortality was similar between both groups (0.95% vs. 0.99%, p=0.94) as were other postoperative outcomes aside from a lower rate of reoperation for valve dysfunction in the leaflet sparing group (0.11% vs. 0.70%, p = 0.04). Anterior leaflet prolapse (OR=7.0, p<0.001) and minimally invasive approach (OR=5.3, p<0.001) were most predictive of leaflet sparing repair.

Conclusion: Despite minor differences in operative times, statewide over the past decade there remains a diverse mix of both classical "resect" and newer "respect" strategies with comparable short-term outcomes and no major timewise trends. These data may suggest that the approaches are either viewed as complementary rather than dichotomous or perhaps are decided on a case-by-case.

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