Commentary: Pacemakers after heart valve operations

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Commentary: Pacemakers after heart valve operations

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Central message: Recovery of conduction system function after permanent pacemaker implantation following heart valve operations is not uncommon.

Central Picture Legend: James S. Gammie, MD
Churyla and colleagues (ref 1) have made an important contribution to the literature and our understanding of the time-course of pacemaker dependency after heart valve operations. In this large series of patients undergoing heart valve surgery the postoperative new permanent pacemaker (ppm) insertion rate was modest (approximately 7 %) and implantation was performed a median of 6 days after operation. As has been previously reported, performance of biatrial lesion sets (compared to isolated left atrial ablation) was associated with substantially higher rates of PPM. The most interesting findings center around recovery of conduction system function among patients interrogated 3 months after operation: the authors report that more than half had recovery of intrinsic rhythm function. Rhythm recovery was substantially more common among patients with sick sinus syndrome as an indication for PPM placement compared to those with atrioventricular node dysfunction. The authors defined pacemaker dependency as intrinsic heart rhythm < 40 beats/minute. A more useful (and stringent) definition might have considered symptoms and additional electrophysiologic characteristics. This work adds to prior studies that have shown variable rates of rhythm recovery after heart surgery (ranging from 16 to 42%) and have emphasized the heterogeneity in the reported definition of pacemaker dependency (ref 2).

How should these findings impact practice? This is an important problem as PPM is a not uncommon sequela of heart valve operations, is associated with significant morbidity, and there are substantial inter-institutional differences in rates of PPM implantation. There is a pressing need for further data to define the kinetics and predictors of intrinsic cardiac rhythm return after operation. How long should we wait before pulling the trigger on PPM, and should it be tailored by patient or rhythm characteristics? What are the operative technical aspects that we can employ to minimize the risk in the first place? And given the accretive risk and costs of a PPM over time should we consider removal in the first 6-12 months? Finally, advances in pacing technology and cardiac biology (ref 3) may offer opportunities to minimize the risks associated with currently available pacing systems.

References:
