Permanent pacemaker requirement after concomitant surgical ablation for atrial fibrillation

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In their recent review of ablation options for atrial fibrillation, Pinho-Gomes et al. [1] omitted permanent pacemaker requirement as a complication of surgical ablation. In their series of 594 patients undergoing concomitant surgical ablation of atrial fibrillation, of whom 6.9% required permanent pacemakers postoperatively, Pecha et al. [2] identified biatrial lesion sets as a statistically significant risk factor for permanent pacemaker insertion after surgical ablation, confirming the findings of Soni et al. [3] in their series of 305 patients. We analysed 17,983 patients undergoing valve surgery with concomitant ablation identified from the Nationwide Inpatient Sample between 2002 and 2010. This administrative database is sponsored by the Agency for Healthcare Research and Quality, and contains information on all inpatient episodes in approximately one-fifth of US hospitals selected to provide a representative sample of national practice: the individual hospitals sampled vary each year. Pacemakers were implanted in 6.9% of patients undergoing valve surgery. After adjusting for baseline patient comorbidity, concomitant ablation procedure [odds ratio (OR) 1.31, 95% confidence interval (CI) 1.27–1.41] was one of the main independent predictors of permanent pacemaker implantation in patients undergoing valve surgery. In patients undergoing ablation, valve procedures associated with the greatest risk of permanent pacemaker requirement were mitral replacement (OR 1.37, 95% CI 1.2–1.67) and combined mitral replacement and tricuspid valve surgery (OR 1.79, 95% CI 1.69–2.77) (isolated aortic valve replacement was used as the reference). Mitral repair was less likely to result in permanent pacemaker (OR 0.84, 95% CI 0.72–0.98), unless concomitant tricuspid surgery was undertaken (OR 1.79, 95% CI 1.37–2.33). These surgical predictors of permanent pacemaker requirement are consistent with data from a previous single-centre series [4], and the overall incidence of pacemaker insertion we observed is similar to that reported in an analysis of the Society of Thoracic Surgeons database [5]. The main limitation of the Nationwide Inpatient Sample in this context is that it does not provide information on the ablation lesion sets employed, or provide sufficient data to adjust for other potential confounding variables. However, this analysis indicates that patients undergoing concomitant surgical ablation at the time of valve surgery have a significantly increased risk of postoperative permanent pacemaker requirement in comparison with those who do not undergo concomitant ablation.

Conflict of interest: none declared.

REFERENCES