

Right Ventricular Septal Pacing: A Comparative Study of Outflow Tract and Mid Ventricular Sites.

Rosso, R¹; Medi, C¹; Teh, A²; To Hung, T¹; Feldman, A¹; Lee, G¹; Mond, H¹

¹The Royal Melbourne Hospital, Melbourne, Australia; ²The Royal Melbourne Hospital, Tel Aviv, Australia

Background: Prolonged right ventricle (RV) apical pacing is associated with left ventricle dysfunction due to dysynchronous ventricular activation and contraction. RV septal pacing allows a narrower QRS compared to RV apical pacing which might reflect a more physiological and synchronous ventricular activation. The purpose of this study was to compare the QRS morphology, duration and suitability of RV outflow tract (RVOT) septal and mid RV septal pacing.

Methods: 17 consecutive patients with indication for dual chamber pacing were enrolled in the study. Two standard 58cm active fixation leads were passed to the RV and positioned in the RVOT septum and mid RV septum using a commercially available septal stylet (model 4140, St.Jude Medical). QRS duration, morphology and pacing parameters were compared at the two sites. The RV lead with less satisfactory electrical parameters was withdrawn and deployed in the right atrium.

Results: Successful positioning of the pacing leads at the RVOT septum and mid RV septum was achieved in 15 patients (88.2%). There were no significant differences in the mean stimulation threshold, R-wave sensing and lead impedance between the two sites. The QRS duration in the RVOT septum was $15114 \pm$ ms and in the mid RV septum $14513 \pm$ ms ($P=0.150$).

Conclusions: This prospective observational study shows that septal pacing can be reliably achieved both in the RVOT and mid RV with active fixation leads using a specifically shaped stylet. There are no preferences in regard to acute lead performance or paced QRS duration with either position. fig.1 Radiographic views of the two leads on the RV septum. The superior lead is in the RVOT and the inferior lead in the mid RV. PA and LAO 40° Table.1 Pacing parameters at RVOT septum and Mid RV septum