1542370

Right Ventricular Septal Pacing: The Success of Stylet-Driven Active-Fixation Leads

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Background: The detrimental effects of right ventricular (RV) apical pacing on left ventricular function has driven interest in alternative pacing sites and in particular the mid RV septum and RV outflow Tract (RVOT). RV septal lead positioning can be successfully achieved with a specifically shaped stylet(fig.1) and confirmed by the left anterior oblique (LAO) fluoroscopic projection (Fig.2). Such a projection is neither always used nor available during pacemaker implantation. The aim of this study was to evaluate how effective is the stylet-driven technique in septal lead placement guided only by posterior-anterior (PA) fluoroscopic view.

Methods: 100 consecutive patients with an indication for single or dual chamber pacing were enrolled. RV septal lead positioning was attempted in the PA projection only and confirmed by the LAO projection at the end of the procedure.

Results: The RV lead position was septal in 90% of patients. This included mid RV in 56 and RVOT in 34 patients. There were no significant differences in the mean stimulation threshold, R-wave sensing and lead impedance between the two sites (Table.1). In the RVOT, 97% (34/35) of leads were placed on the septum, whereas in the mid RV the value was 89% (56/63).

Conclusions: The study confirms that conventional active-fixation pacing leads can be successfully and safely deployed onto the RV septum using a purposely-shaped stylet guided only by the PA fluoroscopic
projection

	RVOT Septum	RV Mid-Septum	P value
R Wave (mV)	17.5 7.6 ±₋₁	14.9 8.7 ±₋₁	0.304
Threshold (Volts)	0.8 0.3 ±₋₁	0.70 0.3 ±₋₁	0.178
Impedance (Ohms)	721₋₁± 148	756 177 ±₋₁	0.528

fig.1 pre-shaped stylet