HOW WILL THIS NEW TECHNOLOGY INFLUENCE VELOCITY TIME INTEGRAL?

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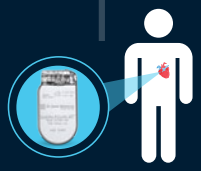
74-YEAR-OLD MALE WITH NYHA CLASS III, LEFT BUNDLE BRANCH BLOCK (LBBB)

VELOCITY TIME INTEGRAL: 22 CM



PRODUCT IMPLANTED
QUADRA ASSURA MP™ CRT-D

MULTIPOINT™ PACING WAS TURNED ON IMMEDIATELY

VELOCITY TIME INTEGRAL:
38% ACUTE IMPROVEMENT AS COMPARED TO TRADITIONAL BIV PACING

* AT 6 MONTHS THE VTI IN TRADITIONAL IMPROVED TO ALMOST AS MUCH AS THE MULTIPOINT™ PACING SITE

PATIENT HISTORY

A 74-year-old male presented with NYHA Class III, left bundle branch block (LBBB), EF 28%, QRS width 148 msec, velocity time integral (VTI) at 22 cm.

The aim of this case was to evaluate the influence of MultiPoint™ pacing on VTI with acute echocardiographic testing at baseline, after implant and after 6 months.

PROCEDURE

After CRT implantation and at 6 months of follow-up, an echocardiographic test was performed measuring mean VTI (over three tests) for each configuration tested. The configurations tested were distal biventricular (D1-RVCoil) and four different MultiPoint pacing configurations (see Table 1). After the implant, the device was permanently programmed in BiV pacing mode.

Table 1

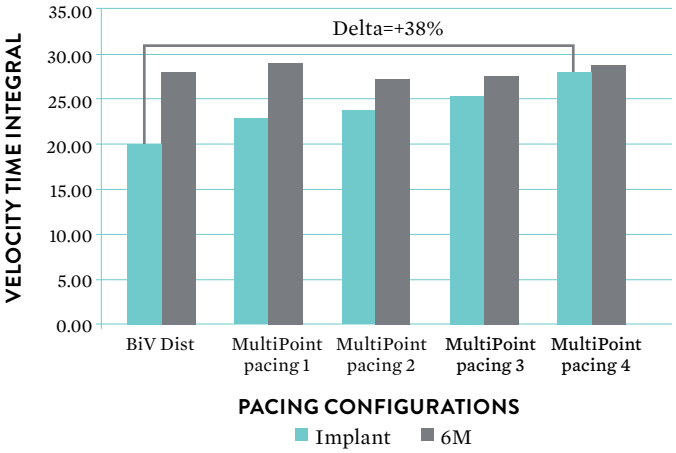
Pacing Configurations	Delays V-V [ms]
BiV: D1-RV Coil	0
MultiPoint pacing: M3-P4; D1-RV Coil	5-5
MultiPoint pacing: M3-P4; D1-RV Coil	20-5
MultiPoint pacing: D1-RV Coil; M3-P4	20-5
MultiPoint pacing: D1-RV Coil; M3-P4	5-5

RESULTS

In acute tests at baseline, VTI with all MultiPoint pacing configurations was always better than in BiV configurations, and the best value was 28 cm (best improvement over the VTI with conventional BiV pacing: Delta = +38%). Only after 6 months in BiV pacing mode, the VTI increased at a value comparable to the acute MultiPoint pacing VTI value, as well. At 6 months, MultiPoint pacing mode was tested again and the VTI was found to be greater than VTI in BiV mode (29 cm, see Figure 1).

BiV pacing increased VTI after 6 months. With MultiPoint pacing, pacing increased VTI immediately after the implant (in acute).

Figure 1. Average of VTI in different pacing configurations



CONCLUSION

Traditional CRT is an established therapy which provides clinical benefit in a majority of patients. However, our case study has shown promising results of the acute impact of MPP on VTI

In this case, the same improvement in VTI was obtained with acute MultiPoint pacing tests 6 months in advance; also, a better result at 6 months follow-up was shown.

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Brief Summary: Please review the Instructions for Use prior to using these devices for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

Quartet™ LV lead
Indications and Usage: The Quartet lead has application as part of an Abbott Biventricular system.
Contraindications: The use of the Quartet lead is contraindicated in patients who:
- Are expected to be hypersensitive to a single dose of 1.0 mg of dexamethasone sodium phosphate.
- Are unable to undergo an emergency thoracotomy procedure.
- Have coronary venous vasculature that is inadequate for lead placement, as indicated by venogram.

MultiPoint™ Pacing and SyncAV™ CRT Technology
Indications: Abbott ICDs and CRT-Ds are intended to provide ventricular antitachycardia pacing and ventricular defibrillation for automated treatment of life-threatening ventricular arrhythmias. AF Suppression™ pacing is indicated for suppression of paroxysmal or persistent atrial fibrillation in patients with the above ICD indication and sinus node dysfunction. In patients indicated for an ICD, CRT-Ds are also intended: to provide a reduction of the symptoms of moderate to severe heart failure (NYHA Functional Class III or IV) in those patients who remain symptomatic despite stable, optimal medical therapy (as defined in the clinical trials section included in the Merlin™ PCS on-screen help)and have a left ventricular ejection fraction less than or equal to 35% and a prolonged QRS duration to maintain synchrony of the left and right ventricles in patients who have undergone an AV nodal ablation for chronic (permanent) atrial fibrillation and have NYHA Class II or III heart failure.
Contraindications: Contraindications for use of the pulse generator system include ventricular tachyarrhythmias resulting from transient or correctable factors such as drug toxicity, electrolyte imbalance, or acute myocardial infarction.
Adverse Events: Implantation of the pulse generator system, like that of any other device, involves risks, some possibly life-threatening. These include but are not limited to the following: acute hemorrhage/bleeding, air emboli, arrhythmia acceleration, cardiac or venous perforation, cardiogenic shock, cyst formation, erosion, exacerbation of heart failure, extrusion, fibrotic tissue growth, fluid accumulation, hematoma formation, histotoxic reactions, infection, keloid formation, myocardial irritability, nerve damage, pneumothorax, thromboemboli, venous occlusion. Other possible adverse effects include mortality due to: component failure, device programmer communication failure, lead abrasion, lead dislodgment or poor lead placement, lead fracture, inability to defibrillate, inhibited therapy for a ventricular tachycardia, interruption of function due to electrical or magnetic interference, shunting of energy from defibrillation paddles, system failure due to ionising radiation. Other possible adverse effects include mortality due to inappropriate delivery of therapy caused by: multiple counting of cardiac events including T waves, P waves, or supplemental pacemaker stimuli. Among the psychological effects of device implantation are imagined pulsing, dependency, fear of inappropriate pulsing, and fear of losing pulse capability.

Refer to the User's Manual for detailed indications, contraindications, warnings, precautions and potential adverse events.

26662-EM-MLP-0515-0013(2) | Item approved for U.S. and OUS.

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