

# Left bundle branch area pacing for electrical synchronization: description of a single-center experience and comparison to conventional biventricular pacing

Daniel A. Gomes, Francisco Moscoso Costa, Rita Reis Santos, Mariana Sousa Paiva, Gustavo Rodrigues, Daniel Matos, João Carmo, Gabriela Bem, Isabel Santos, Pedro Galvão Santos, Mafalda de Sousa, Pedro Carmo, Diogo Cavaco, Francisco Belo Morgado, Pedro Adragão  
Department of Cardiology, Hospital de Santa Cruz, Centro Hospitalar de Lisboa Ocidental

## Background & Aim

RV pacing has been shown to induce desynchrony and LV dysfunction. LBBAP is increasingly recognized as an attractive alternative for conventional pacing, by preserving synchrony.

**Aim:** describe procedural characteristics of patients with LBBAP and compare final QRS duration with those undergoing BiV-CRT for RV pacing-induced cardiomyopathy.

## Methods

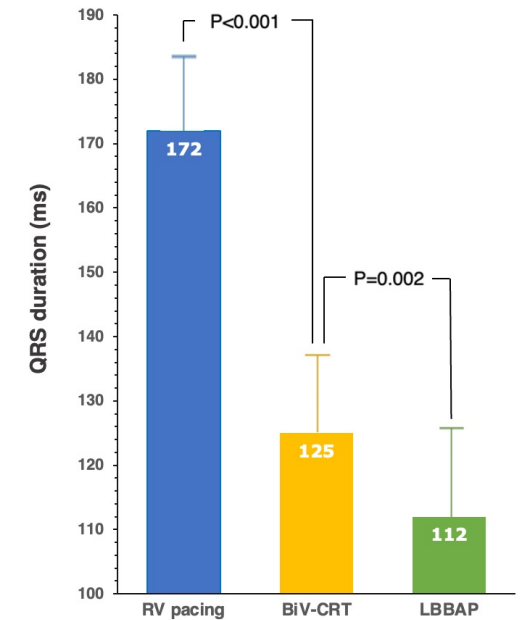
- Single-center cohort including consecutive patients undergoing LBBAP since 2021.
- Pacing lead was implanted on the IVS, aiming RBBB pacing pattern and LVAT < 90ms.
- Feasibility, procedure and fluoroscopy times, QRS duration after implantation, and periprocedural complications were assessed.
- Procedural characteristics were compared to a group of consecutive patients undergoing BiV-CRT upgrade for **RV pacing-induced cardiomyopathy**.

## Results

Characteristics of patients	(N=54)
Age, mean±SD, years	76±13
Male sex, n (%)	34 (83%)
LVEF, mean±SD, %	55±11
LVEF < 50%	10 (19%)
Pacing indication	
High-degree AVB	27 (50%)
SND	13 (24%)
Failed BiV-CRT	7 (13%)
AF with pauses	7 (13%)
LVAT	86 (80-95)
Lead dislocation/ perforation	0

Compared to BiV-CRT upgrade (n = 46):

Lower procedure (64min [53-82] vs. 112min [94-140],  $p<0.001$ ) and fluoroscopy times (4.1min [3.4-6.5] vs. 19.3min [11.6-33.6],  $p<0.001$ ).



(QRS 110ms [IQR 102-132] in LBBAP due to failed BiV-CRT)

## Conclusion

- LBBAP achieved greater electrical synchronization compared to BiV-CRT, and seems a safe and feasible alternative pacing strategy to preserve synchrony.
- Further studies are needed to understand its role as first-line therapy in patients with indication for ventricular pacing to prevent desynchrony-related cardiomyopathy.