**Left bundle branch pacing in hypertrophic cardiomyopathy patient after septal myectomy**

Suveen Pothuru, Benjamin Kash, Hussam Abuissa, Robert Gallegos, Attila Roka

**Background:**

Left bundle branch pacing (LBBP) is increasingly favored as a physiological pacing strategy in patients with atrioventricular block. However, achieving LBBP can be challenging in patients with hypertrophic cardiomyopathy (HCM) who have undergone septal myectomy, as the conduction system may have been injured by the surgery. This report presents a case of successful LBBP in an HCM patient with a history of septal myectomy.

**Case Presentation:**

A 70-year-old Caucasian female with a medical history of mitral valve stenosis, mitral valve regurgitation, and left ventricular outflow tract obstruction secondary to hypertrophic cardiomyopathy who presented with progressively worsening symptoms. Over the past year, she had experienced increasing dyspnea on exertion, positional dizziness, and fatigue, which had significantly worsened in the last few months. She was evaluated by the cardiothoracic surgery team and underwent mechanical mitral and aortic valve replacement, along with septal myectomy. During the procedure, a sub-aortic septal resection was performed, epicardial temporary pacing wires were placed. The patient developed complete AV block after the surgery.

After four days of observation, the patient remained in a persistent third-degree AV block without escape rhythm. Given the continued AV block, a permanent dual-chamber pacemaker was indicated and implanted – no indications for defibrillator or cardiac resynchronization were met. During the implant, septal pacing provided a wide paced QRS (Figure 1), therefore conduction system pacing was attempted. The lead was subsequently advanced into the septum until successful stable left bundle branch area capture was achieved (Figure 2). Post-implantation EKG demonstrated an AV dual-paced rhythm with a narrow QRS complex.

**Conclusion:**

This case highlights the feasibility of achieving left bundle branch pacing in a patient with hypertrophic cardiomyopathy who has undergone septal myectomy. Despite the challenges due to the potential injury to the left bundle branch during myectomy, LBBP was successfully performed, providing physiological pacing with a narrow QRS complex.

 