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From bradycardia to temporary pacing: nursing care of a patient with third-degree atrioventricular block after transcatheter aortic valve implantation

Hrvoje Krešo*, **Ivana Prišć**

University Hospital Centre Osijek, Osijek, Croatia

KEYWORDS: atrioventricular block, transcatheter aortic valve implantation, temporary cardiac pacing, transcutaneous pacing, nursing care.

CITATION: Cardiol Croat. 2026;21(11-12):371. | https://doi.org/10.15836/ccar2026.371

***ADDRESS FOR CORRESPONDENCE:** Hrvoje Krešo, Klinički bolnički centar Osijek, J. Huttlera 4, HR-31000 Osijek, Croatia. / Phone: +385-91-593-5228 / E-mail: hrvoje.kreso@kbco.hr

ORCID: Hrvoje Krešo, https://orcid.org/0009-0009-3722-5848 • Ivana Prišć, https://orcid.org/0009-0009-3940-1139

Introduction: Conduction disturbances are among the most common complications following transcatheter aortic valve implantation (TAVI), with pre-existing right bundle branch block (RBBB) associated with an increased risk of complete atrioventricular (AV) block.[1] Complete AV block may develop during the procedure or several days later.[1,2] Temporary cardiac pacing provides support during this period, while Cardiac Intensive Care Unit (CICU) nurses play a key role in early recognition of clinical deterioration, pacing surveillance, and identification of potential complications.[3,4] This case report describes nursing care for a patient with recurrent complete AV block following TAVI.

Case report: 75-year-old man with severe aortic stenosis, coronary artery disease, diabetes, chronic obstructive pulmonary disease and baseline RBBB with left anterior hemiblock underwent transfemoral TAVI with a self-expanding valve. Immediately after implantation, asystole and complete AV block occurred, and a temporary transvenous pacemaker was inserted via the femoral vein. In the CICU his own rhythm returned. Nursing care included continuous rhythm monitoring, puncture-site and lead care, and pressure-injury prevention. Awaiting a decision on permanent pacing, he became anxious and did not adhere to bed rest. Repeated explanation, a talk with the physician and night sedation calmed him. After several days of sinus rhythm the pacemaker was removed, 24-hour Holter monitoring showed only one episode of two non-conducted P waves, and he was transferred to the ward. On postoperative day 5 he collapsed beside his bed and struck his head. 12-lead ECG showed complete AV block at 45/min, and brain CT excluded acute injury. Back in the CICU his rate fell to 24/min, atropine was given, but P-wave asystole lasting over 10 seconds with loss of consciousness followed. After brief chest compressions consciousness returned and transcutaneous pacing via adhesive pads was briefly started. Once the rhythm recovered under an adrenaline infusion, it was kept on standby while nurses secured arterial and venous access and prepared him for the catheterization laboratory. Temporary transvenous pacing was re-established under ultrasound guidance, and a dual-chamber permanent pacemaker was implanted the next day without complications. He was discharged home in paced rhythm on postoperative day 8.

Conclusion: Complete AV block after TAVI can recur days after apparent recovery and removal of temporary pacing, particularly in patients with pre-existing RBBB. Rhythm vigilance after transfer from intensive care, fall prevention, readiness for transcutaneous pacing and attention to the patient's anxiety are key nursing contributions to safety.

RECEIVED:
October 19, 2026
UPDATED:
November 4, 2026

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