

Images in  
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# Leadless Pacemaker Implantation Following Transcatheter Aortic Valve Implantation Using SAPIEN 3

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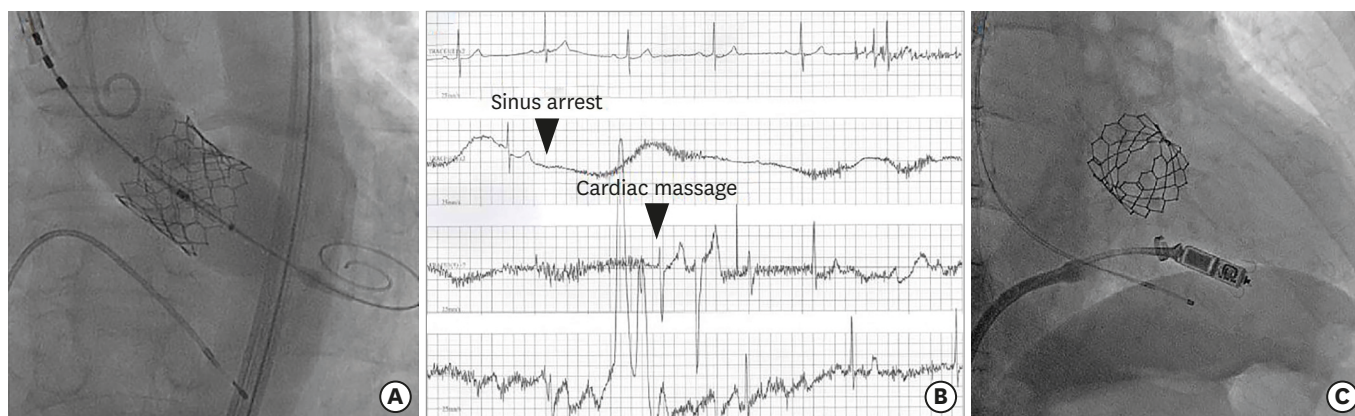
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A 91-year-old male with symptomatic severe aortic stenosis underwent transcatheter aortic valve implantation (TAVI) using a 26-mm balloon-expandable SAPIEN 3 (Edwards Lifesciences, Irvine, CA, USA). The device was deployed via a transfemoral approach (**Figure 1A**). His pre-procedural electrocardiogram showed sinus rhythm without conduction disturbances (CDs). Within a few hours after TAVI, he suddenly experienced sinus arrest (**Figure 1B**) with syncope and required cardiac massage. There was no evidence of other complications after TAVI, and thus the event was thought to be an implant-related arrhythmia. The patients got cardiac arrest once, but he required cardiac massage, so we thought that he would need a permanent pacemaker, but he was very old and frail. We ultimately decided to implant a percutaneous leadless transcatheter pacemaker (Micra™; Medtronic Inc., Minneapolis, MN, USA) to minimize the damage (**Figure 1C**). He was discharged from our hospital on foot without any complications.

The incidence of CD after TAVI is common. Some studies have shown poor outcomes for patients with CD after TAVI. To the best of our knowledge, this is the first case report of leadless pacemaker implantation following TAVI using SAPIEN 3. It is evidently important



**Figure 1.** (A) A 26-mm SAPIEN 3 deployed via a transfemoral approach. (B) Electrocardiographic monitoring within a few hours after TAVI showing the unexpected sinus arrest. (C) A percutaneous leadless transcatheter pacemaker Micra™ developed via transfemoral approach. TAVI = transcatheter aortic valve implantation.

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#### Conflict of Interest

The authors have no financial conflicts of interest.

#### Author Contributions

Data curation: Miura M; Investigation: Miura M, Shikama T, Shirai S, Hayashi M, Morita J, Nagashima M; Supervision: Shirai S, Nagashima M, Ando K; Writing - original draft: Shikama T; Writing - review & editing: Miura M.

to minimize the damage related to pacemaker implantation, particularly after TAVI, because patients eligible for TAVI are usually old and frail. Leadless pacemaker may be an alternative option for frail patients with CD after TAVI.