A FAILURE CASE OF LEADLESS PACEMAKER IMPLANTATION DUE TO AZYGOS CONTINUATION OF THE INFERIOR VENA CAVA

Tetsuro Hamaoka
Takuo Nakagami
Hideki Kimura
Jun Munakata
Yoshihiro Azuchi
Daiki Goto
Yusaku Kaneko
Nobunari Tomura
Masakazu Kikai
Kuniyoshi Fukai
Shinichiro Yamaguchi
Hirotaka Tatsukawa

Introduction: The MicraTM Trans Catheter Pacing (TCP) system is a miniaturized pacemaker and a promising technology. After sale in 2017, several complications including cardiac tamponade, perforation, dislodgement and even death, were reported and alerted in Japan. The safe implantation is one of the most important subjects and there still is room for improvement.

Method: N/A

Result: A 77-year-old female was admitted due to a history of recurrent faintness attacks and diagnosis of paroxysmal atrial fibrillation and sick sinus syndrome with maximum 4-second pause on Holter electrocardiogram. Echocardiography showed good cardiac function without organic changes and coronary angiography showed intact coronary arteries. We planned to implant a permanent pacemaker, and she preferred a leadless pacemaker. After inserting a 27-Fr introducer via the right femoral vein, we intended to deliver the Micra TCP system to the right atrium. Then, we tried to navigate to the right ventricular, but the Micra TCP system bended and twisted like sigmoid and it seemed to be a risk of perforation. So we injected a contrast medium via the introducer to check the anatomy and found the azygos vein, the azygos arch, the superior vena cava and the right atrium were enhanced in order. We realized this procedure was completely impossible due to this anatomical malformation and had to give it up. Contrast-enhanced CT finally made a diagnosis of azygos continuation of the inferior vena cava (IVC) and we implanted a permanent pacemaker transvenously.

Conclusion: Azygos continuation of the IVC is an uncommon and rare vascular anomaly and unawareness of it could endanger. A preprocedural CT could be one of the ways to make a Micra TCP system implantation safer.