A case of atrial tachycardia that was difficult to diagnose from body surface electrocardiogram and intracardiac electrocardiogram of pacemaker

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Introduction: The case is a 54-year-old woman.

Methods: A complete atrioventricular block was pointed out at a medical checkup in 2017. Grandmother, mother and paternal uncle also had pacemaker surgery history. There were no basic heart disease. Sick sinus syndrome was also found, and pacemaker implantation was performed. Six months after indwelling, atrial tachycardia was found and frequency gradually increased, so catheter ablation was performed in 2019. Preoperatively, the atrial wave cycle length around 200ms and 400ms were confirmed by body surface electrocardiogram and intracardiac electrocardiogram of pacemaker.

Result: In the intracardiac electrocardiogram at the start of ablation, the AT with cycle of 200 ms was sustained. There were inter atrial conduction delay and intermittent 2:1 LA to RA conduction block. In the voltage mapping of the left atrium, there was low voltage zone (LVZ) only on the anterior wall. Fragment potential was found between the LVZ of the anterior wall and mitral annulus, and tachycardia was terminated at this site by the catheter contacts, and it became impossible to induce by ablation. After RF application, she can live without recurrence of AT.

Conclusion: In this case, although there was no basic heart disease, in addition to the atrioventricular conduction block and sick sinus syndrome, inter atrial conduction block was also complicated. As significant family history was also recognized, so we considered that these abnormalities were caused by progressive cardiac conduction disorder.