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LEADLESS PACEMAKER IMPLANTATION THROUGH THE INTERNAL JUGULAR VEIN: A CASE REPORT

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Introduction: Leadless pacemaker implantation (LPI) has fewer device complications and reduced chance of infection compared to transvenous pacemakers. For this type of intervention, the standard access is the femoral vein. However, the use of the internal jugular vein (IJV) is emerging as a novel possible alternative. We report rare a case of LPI through IJV.

Case description: an 84-year-old man was admitted to our hospital for recurrent syncope. He had a history of permanent atrial fibrillation (AF), type 2 diabetes (T2D), stage 4 chronic kidney disease (CKD), RBBB and previous ascending aorta replacement and mitral valvuloplasty. During ECG monitoring evidence of pathological pauses (>6 s). The patient was candidate for PM leadless implantation. Due to the finding of unfavourable femoral venous access bilaterally we decided to proceed via the right internal jugular vein (IJV). The vein access was obtained in ultrasound-guided way, then a 8-Fr sheath was placed in the right IJV, a stiff guide wire (Amplatz Super Stiff guide wire, Boston Scientific) was guided down into inferior vena cava (IVC), dilation of the entry site was performed using sequentially increasing diameter dilators (16 and 20 Fr). Under fluoroscopic guidance the introducer system (27 Fr) was advanced through the IJV and into the RA, after that the Micra delivery system was advanced through the introducer. The Micra VR device (Medtronic Inc., Minneapolis, Minnesota, USA) was advanced in the RA and then, after crossing the tricuspid valve, was implanted on the mid interventricular septum on the first attempt. Final electrical parameters were pacing threshold of 0.25 V @ 0.24 msec, ventricular sensing 6.2 mV, impedance 640 ohm.

The patient reported no pain or discomfort during the procedure and reaching the interventricular septum was easier for the operator. Immediate after the implantation the patient was able to walk.

Discussion: The use of IJV as access to perform a leadless PM implantation is generally considered as a bail-out strategy in patients in whom it is not possible to use the femoral veins. However, multiple case reports and an observational study in which 82 patients were implanted through the IJV showed multiple potential advantages of this novel approach for leadless pacing: absence of vascular complications, non-apical positioning of leadless PM becomes easier without having more deployment attempts, the possibility of walking right after the procedure reducing back pain and avoidance of deep venous thrombosis, same-day discharge could be possible.

Conclusion: The jugular approach seems to be as safe as the femoral approach and therefore could be considered an alternative implantation method for leadless pacing.

