

## EP CASE REPORT

# Intracardiac echocardiography catheter-guided zero fluoroscopy transeptal puncture technique for ablation of left-sided accessory pathway in a pregnant woman

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Supraventricular tachycardia (ST) management may become a real challenge during pregnancy. Because of the potential risk for foetal damage with radiation exposure, ablation therapy in pregnancy is not encouraged in contemporary guidelines. On the other hand, antiarrhythmic drugs pose some risk of adverse effects or teratogenicity to the foetus. Moreover, a high rate of symptomatic ST during pregnancy has been described, especially those due to accessory pathway.<sup>1</sup>

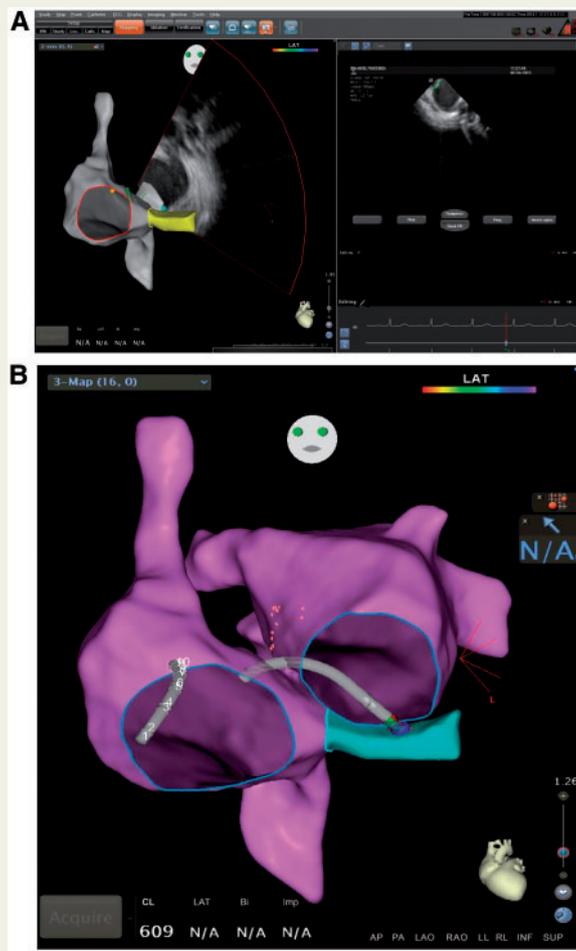
We report the case of a 41-year-old woman with normal cardiac function and without history of previous cardiac disease, 25 weeks pregnant, presented at our emergency department with recurrent orthodromic atrioventricular reentrant tachycardia supported through a left-sided accessory pathway. Medical treatments were unsuccessful so we decided to perform a radiofrequency ablation of the tachycardia without fluoroscopy.

Right atrium and coronary sinus (CS) fast anatomical mapping geometry reconstruction was obtained with an ablation catheter with magnetic sensor and guided by CARTO®3 mapping system (Thermocool Smarttouch, Biosense Webster, Johnson & Johnson Medical, Ltd., CA, USA). Tachycardia was easily inducible and became incessant; the earliest atrial activation time was seen in the mid-CS that confirms the presence of a posterior left-sided accessory pathway. Intracardiac echocardiography catheter (ICE, Soundstar, 10 French, Biosense Webster, Johnson & Johnson Medical, Ltd., CA, USA) was advanced via left femoral vein to obtain left atrium and interatrial septum three-dimensional reconstruction (A). An 8-French sheath was then introduced into the right atrium; driven by CARTO system 3D reconstruction, we advanced the mapping catheter into a sheath through right atrium and we could easily reach and tent the fossa ovalis. At this point, the sheath was advanced over the catheter to perform tenting movement with it and then the mapping catheter was removed; the dilator and the needle were advanced into the sheath, and transeptal puncture was performed. After transeptal puncture, mapping catheter was finally advanced into the left atrium (B).

The earliest atrial activation time was confirmed in the posterior atrioventricular transition in correspondence of mid-CS. Radiofrequency ablation (35 W, 90 s) on this site terminated the tachycardia immediately and no more retrograde ventriculoatrial conduction was seen. There was no recurrent event of tachycardia on 4 months follow-up post-ablation and until the childbirth.

Nowadays, most ST should be treated without fluoroscopy. To meet the as low as reasonably achievable indications in terms of radiation exposure in our centre, we routinely perform right atrial catheter ablation without fluoroscopy guidance. Using ICE also, left atrial ablation should be safely performed without X-ray. However, standard transeptal puncture requires fluoroscopy support. We described an ICE-guided zero fluoroscopy technique based on Sound 3D map of the fossa ovalis, using a mapping catheter to reach the fossa and subsequently positioning the transeptal needle into the fossa. To our knowledge, this is the first case of left accessory pathway ablation that use an ICE-guided transeptal technique to avoid completely X-ray exposure.

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**Conflict of interest:** none declared.

## Reference

1. Yaksh A, van der Does LJ, Lanter EA, de Groot NM. Pharmacological therapy of tachyarrhythmias during pregnancy. *Arrhythm Electrophysiol Rev* 2016;**5**(1):41–4.