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CASE REPORTS

Successful pulmonary vein isolation in a patient with situs inversus abdominalis and status post interatrial Dacron patch implantation

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1 Background

Pulmonary vein isolation in patients with situs inversus abdominalis can be challenging.

2 Objective

We describe a case of successful pulmonary vein isolation in a patient with situs inversus abdominalis, an interatrial Dacron patch, and a DDD pacemaker (PM).

3 Case

A 67-year-old woman with situs inversus abdominalis, status post surgical correction of an atrial septal defect using a Dacron patch, and a DDD pacemaker was referred for pulmonary vein isolation because of persistent atrial fibrillation. A CT scan showed a left-sided liver (thus, no option for transhepatic access) and an inferior caval vein (ICV), transversely crossing below the level of the diaphragm towards the entrance of the right atrium (RA) (Fig. 1a). Under general anesthesia and TEE-guidance (thicker and more echodense interatrial septum visible), after puncture of the left femoral vein, an 8.5 French Fast-Cath SL1 sheath was advanced into the superior caval vein. Because of the angle at which the ICV entered the RA, the sheath was forced towards the lateral wall of the RA. Therefore, the angulation of the Brockenbrough transseptal needle was modified. Using a pull-down technique, transseptal puncture with the needle through the patch was successful, but the dilator of the sheath could not be advanced. An Amplatz Super Stiff guidewire was placed in the left superior pulmonary vein. The dilator again could not pass the patch, because the force vector of the sheath was still directed towards the lateral wall of the RA (Fig. 1b). After dilatation with a 5 × 40 mm Charger non-compliant balloon (Fig. 1c), the sheath could be introduced into the left atrium (Fig. 1d). Using a Carto 3D electroanatomical mapping system, an uncomplicated pulmonary vein isolation was performed and bidirectional block of all pulmonary veins could be demonstrated. At 3-month follow-up, the patient was free of complaints and the 7-day Holter-ECG showed continuous sinus rhythm.

4 Conclusion

Pulmonary vein isolation in a patient with situs inversus abdominalis, an interatrial Dacron patch, and a DDD pacemaker is feasible. Transseptal puncture can be complicated.

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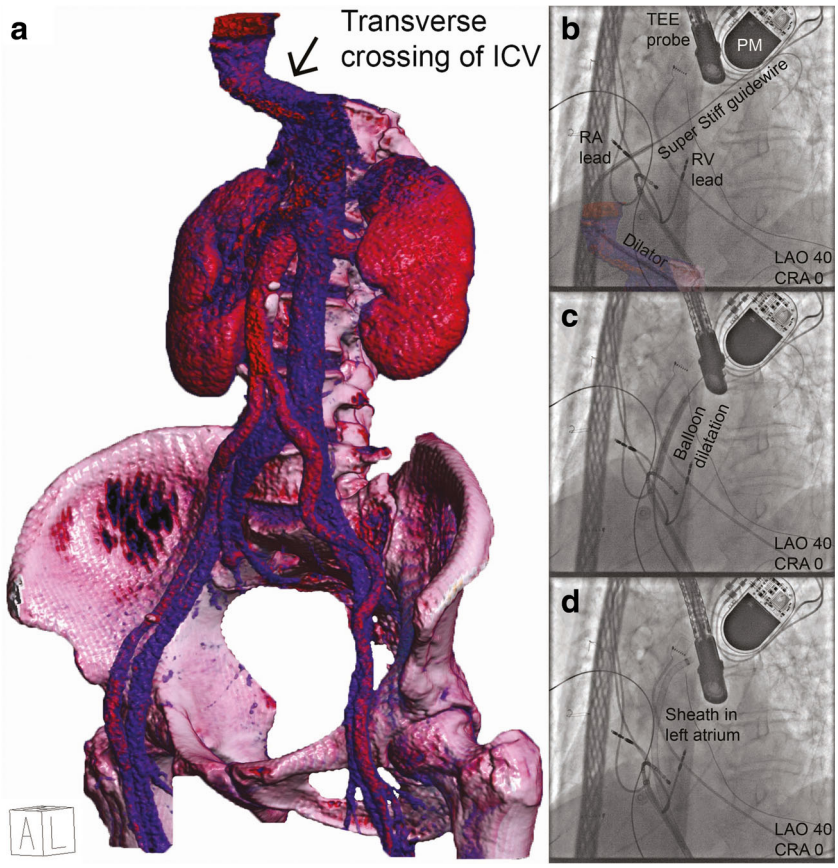

Fig. 1 **a**–**d** Left-sided liver and inferior caval vein (ICV) transversely crossing below the level of the diaphragm towards the entrance of the right atrium (RA)