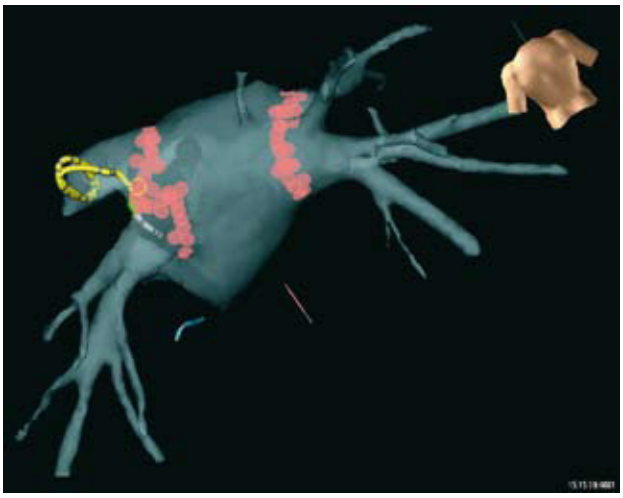

Figure 1.

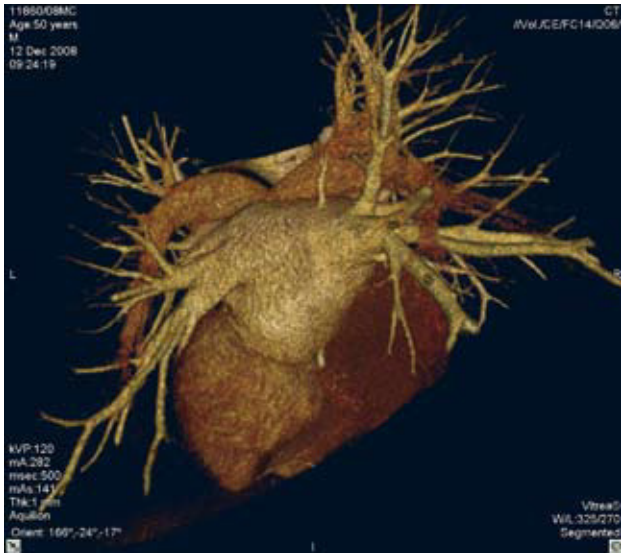

Figure 2.

Posterior Accessory Pulmonary Veins and Atrial Fibrillation

In recent years, electroanatomical mapping systems that integrate images obtained by computed tomography (CT) and magnetic resonance imaging (MRI) have been developed to facilitate catheter ablation of arrhythmias. Various studies have demonstrated the precision of this integrated imaging to guide catheter ablation of atrial fibrillation (AF). Knowledge of the number and location of the pulmonary veins (PVs) is important to improve the efficacy and safety of the procedure.

A male patient was referred for PV isolation to treat AF refractory to drug treatment. Virtual anatomical reconstruction of the left atrium (LA) and PVs was carried out with the Ensite-NavX navigation system (Figure 1), and the resulting image was merged with those obtained 24 hours earlier by multislice CT (Figure 2). The images showed an unusual variant of pulmonary venous drainage through a vein from segment 6 (superior) of the right lower lobe, draining in the posterior aspect of the LA. The 4 PVs were electrically isolated by radiofrequency ablation, while sparing the accessory PV because of its small diameter and absence of electric activity in the interior.

Accessory or supernumerary PVs can arise during embryologic development, and result in additional, separate openings of the LA with typically narrower atriovenous junctions. Knowledge of their existence can be useful to facilitate ablation, to avoid their inadvertent injury, and to assess the possibility that they might be a focus of automatism. Thus, the importance of image integration technology between navigators and CT/MRI is obvious.

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