Supplementary Information

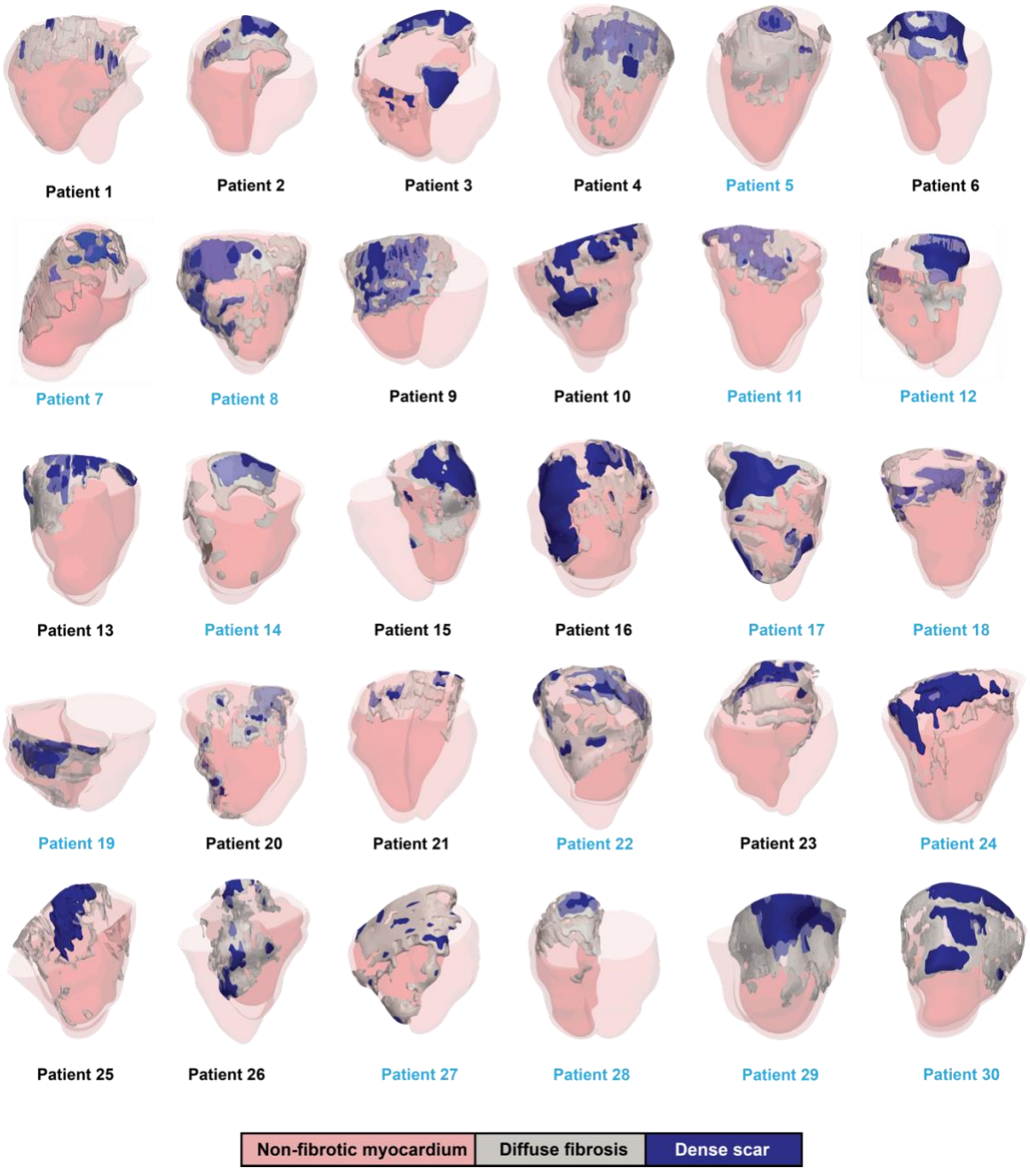

Figure S1: DT geometrical reconstructions for all 30 ARVC patients. All the DTs are shown with an opaque RV endocardium and a partially transparent epicardium for visualizing the fibrotic (gray) and scar

(dark blue) distribution. DTs with cyan text are patients with *PKP2* pathogenic variants, and the rest are GE.

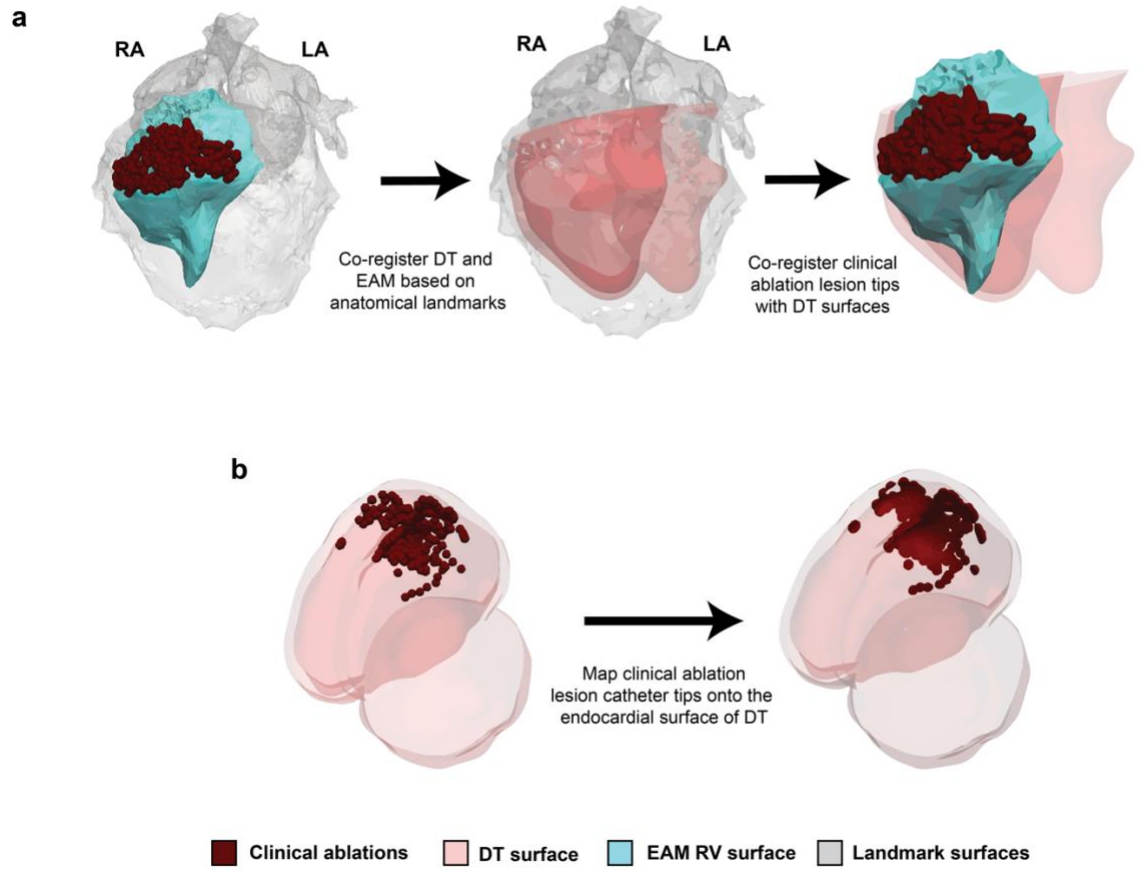

Figure S2: Registration of EAM geometry and clinical ablation catheter tip locations to the DT surface. a Anatomical landmarks registered to the EAM surface (left) during the ablation procedure. These landmarks were then registered to the DT's endocardial surface (middle) using a fiducial registration method. The transformation matrix from the fiducial registration was used to co-register the EAM surface and ablation catheter tip locations with the DT (right). **b** Following the registration, the catheter tip points were projected to the closest point on the endocardial surface of the DT. Each projected ablation point was assumed to create a semi-spherical lesion with a radius of 3.5 mm from the endocardial surface (volume up to 89.83mm^3). The volume integral of this lesion was calculated to avoid double-counting overlapping regions.

Table S1 Conduction velocity and conductivity values for different tissue types of the two genotypes.

Genotype	Tissue type	Longitudinal CV (m/s)	Transverse CV (m/s)	Longitudinal conductivity (S/m)	Transverse conductivity (S/m)
GE	Non-fibrotic	0.570	0.280	0.132	0.031
	Fibrotic	0.453	0.150	0.078	0.011
	Dense scar	0	0	0	0
PKP2	Non-fibrotic	0.342	0.134	0.111	0.019
	Fibrotic	0.272	0.107	0.033	0.007
	Dense scar	0	0	0	0

m/s: meters per second; S/m: siemens per meter.