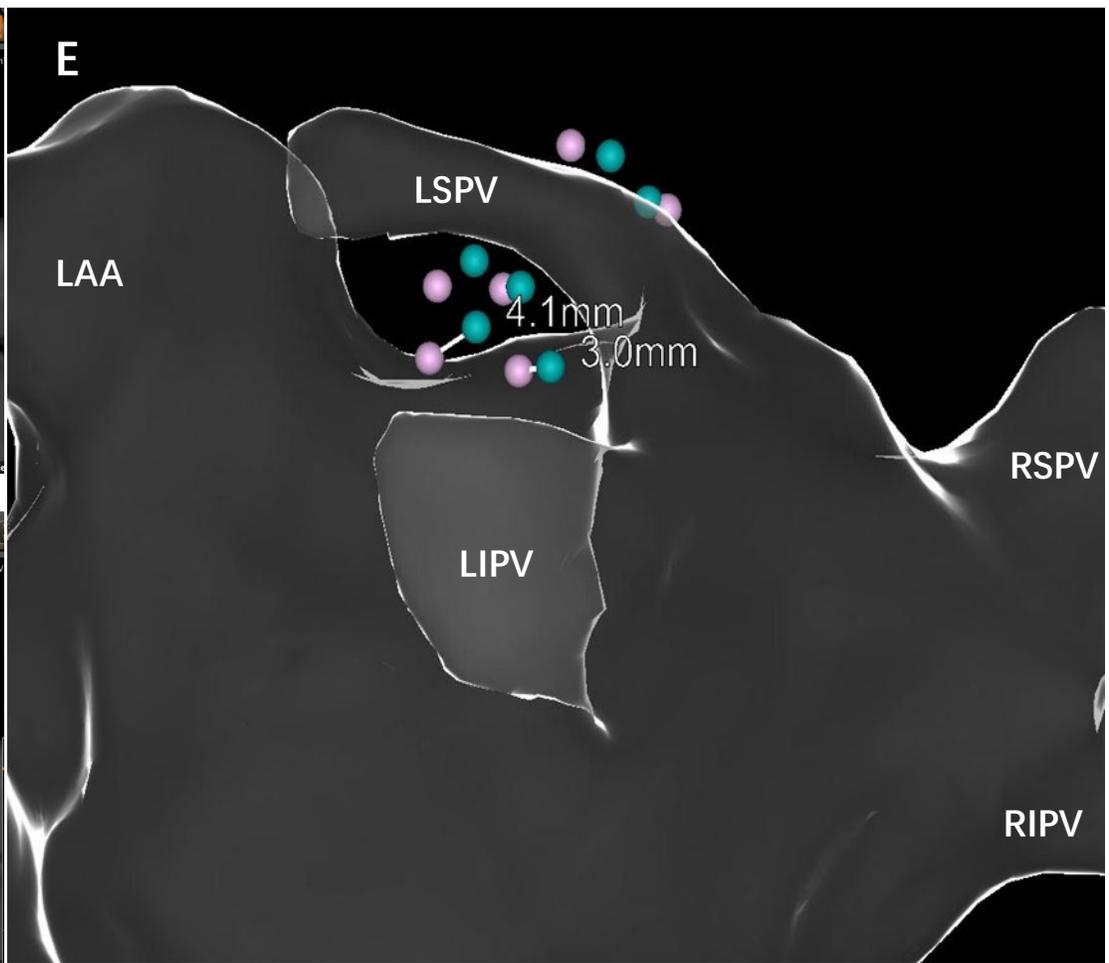
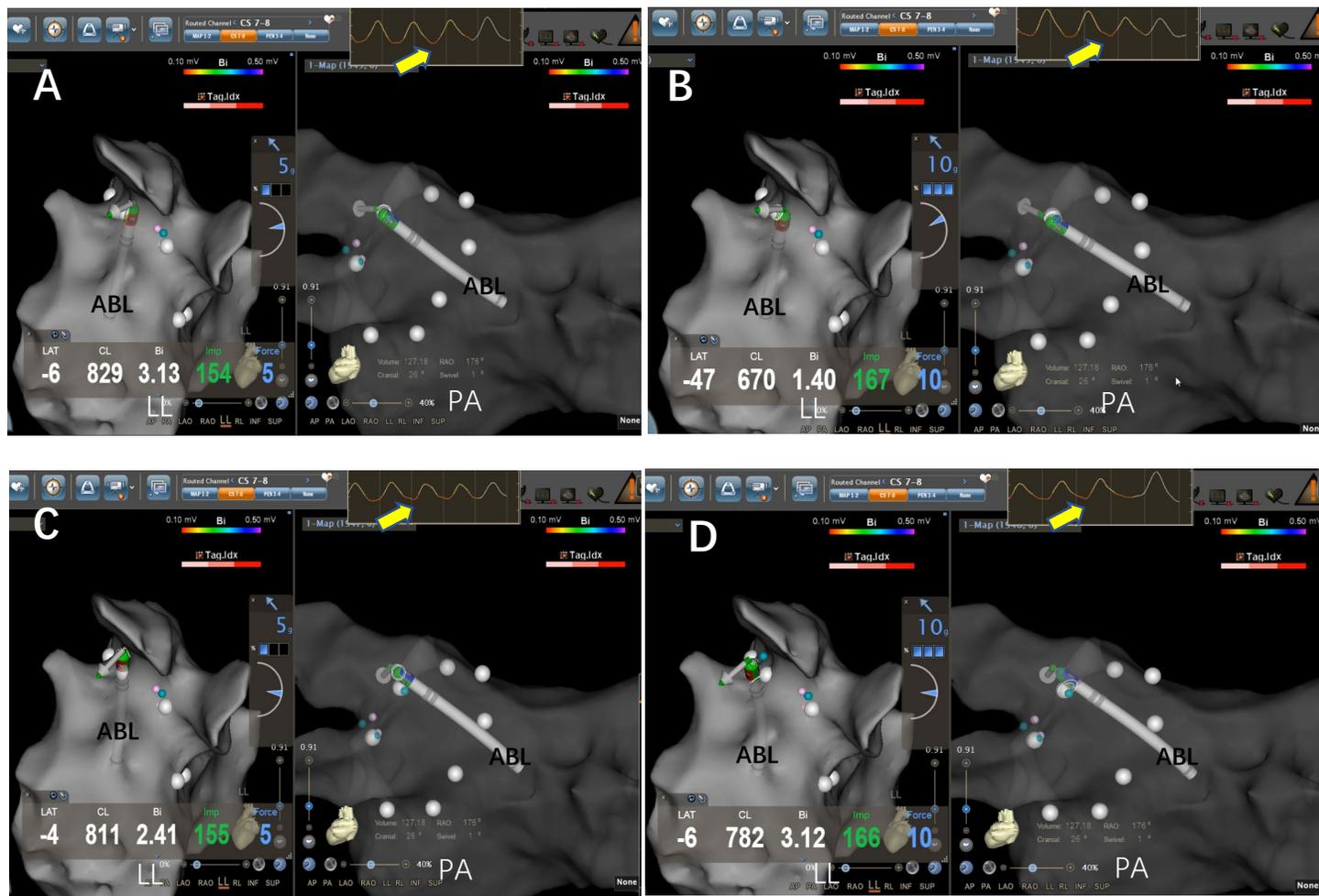


## Supplemental Figure Legend

**Typical techniques for determining the  $Tip_{loc}$  and calculation of the value of  $Tip_{disp}$ .**

**Panel A and B**, for the “edge of ridge” placement at the antero-superior segment of left PV, the  $Tip_{loc}$  was obtained at CF 5 g (blue dots) and 10 g (pink dots) gating at the end-expiratory phase, respectively; and was displayed as blue and pink dots on the geometry (LL and PA view). **Panel C and D**, for the “PV-side of ridge” placement at the same PV segment, the  $Tip_{loc}$  was acquired at CF 5 g and 10 g gating at the end-expiratory phase, respectively; and was displayed as blue and pink dots on the left atrial geometry (LL and PA view). **Panel E**, the six pairs of  $Tip_{loc}$  at 9, 10:30 and 12 o’clock direction of the left PV line were displayed on the modified PA view of the geometry.  $Tip_{disp}$  was defined as the distance between  $Tip_{loc}$  at CF 10 g and  $Tip_{loc}$  at CF 5 g. In this patient, it was 4.1 mm for the “PV-side of ridge” placement and was 3.0 mm for the “edge of ridge” placement at 9 o’clock direction of the left PV line. *Tip<sub>loc</sub>, Tip location; Tip<sub>disp</sub>, Tip displacement; CF, contact force; PV, pulmonary vein; LL, left lateral; PA, postero-anterior; ABL, the ablation catheter; LSPV, left superior PV; LIPV, left inferior PV; RSPV, right superior PV; RIPV, right inferior PV; LAA, left atrial appendage.*



Supplemental Figure S1