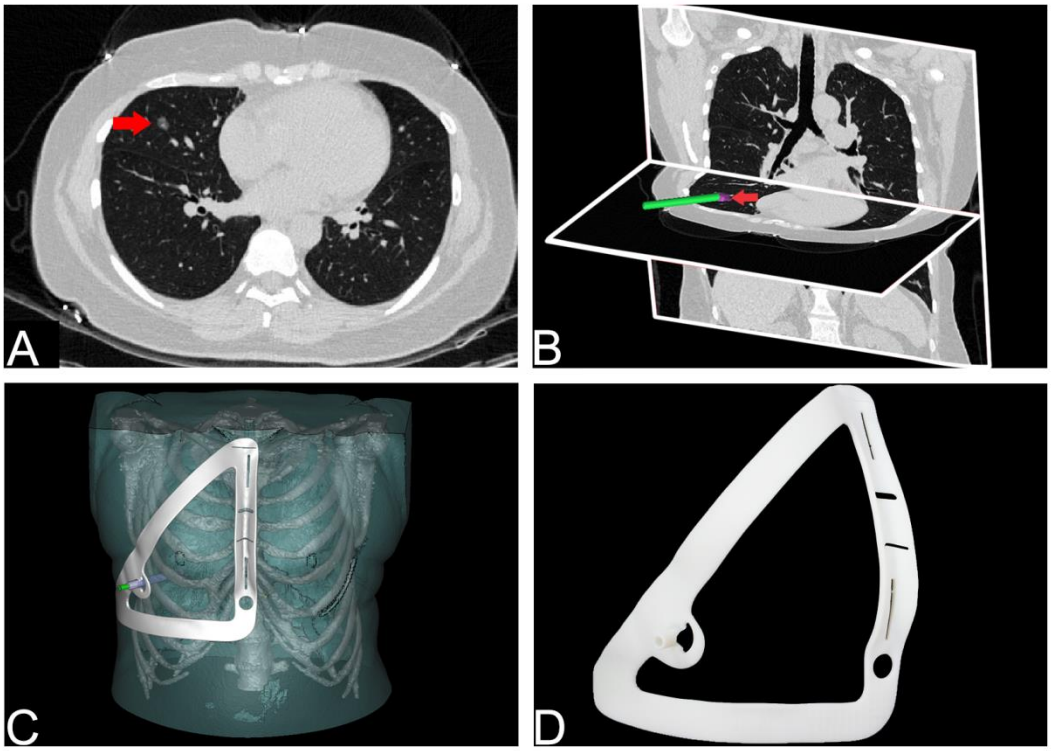
Supplementary Online Content

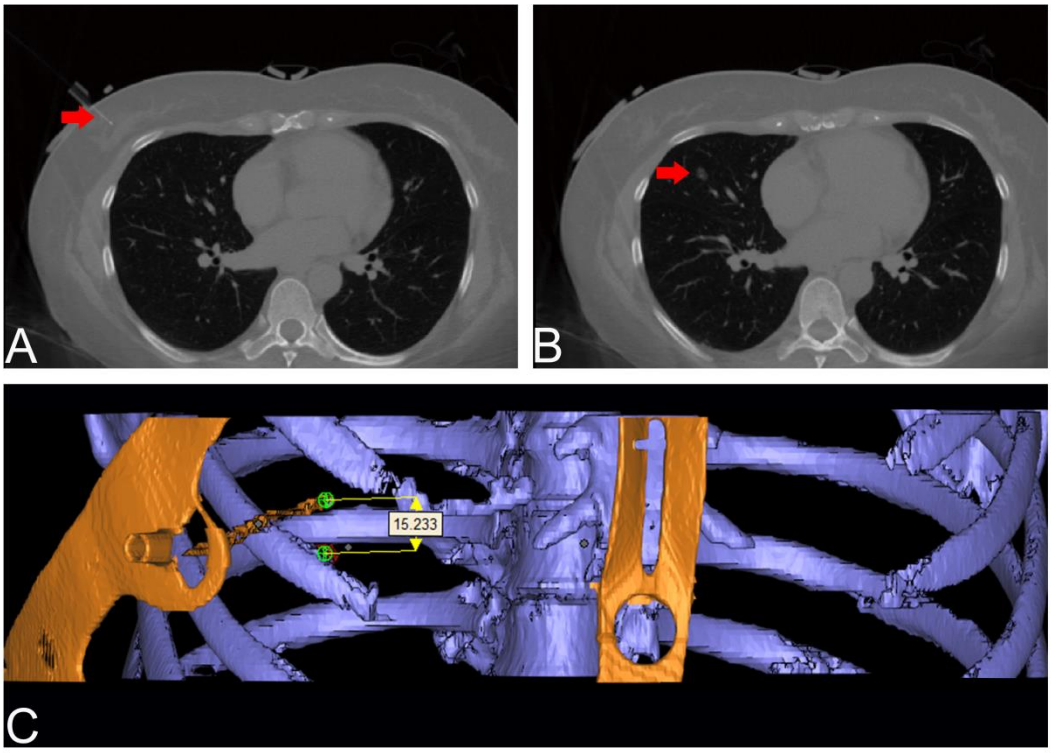
Zhang L, Wang L, Kadeer X, et al; AME Thoracic Surgery Collaborative Group. Accuracy of a 3-dimensionally printed navigational template for localizing small pulmonary nodules: a noninferiority randomized clinical trial. *JAMA Surg*. Published online December 26, 2018. doi:10.1001/jamasurg.2018.4872

This supplementary material has been provided by the authors to give readers additional information about their work.

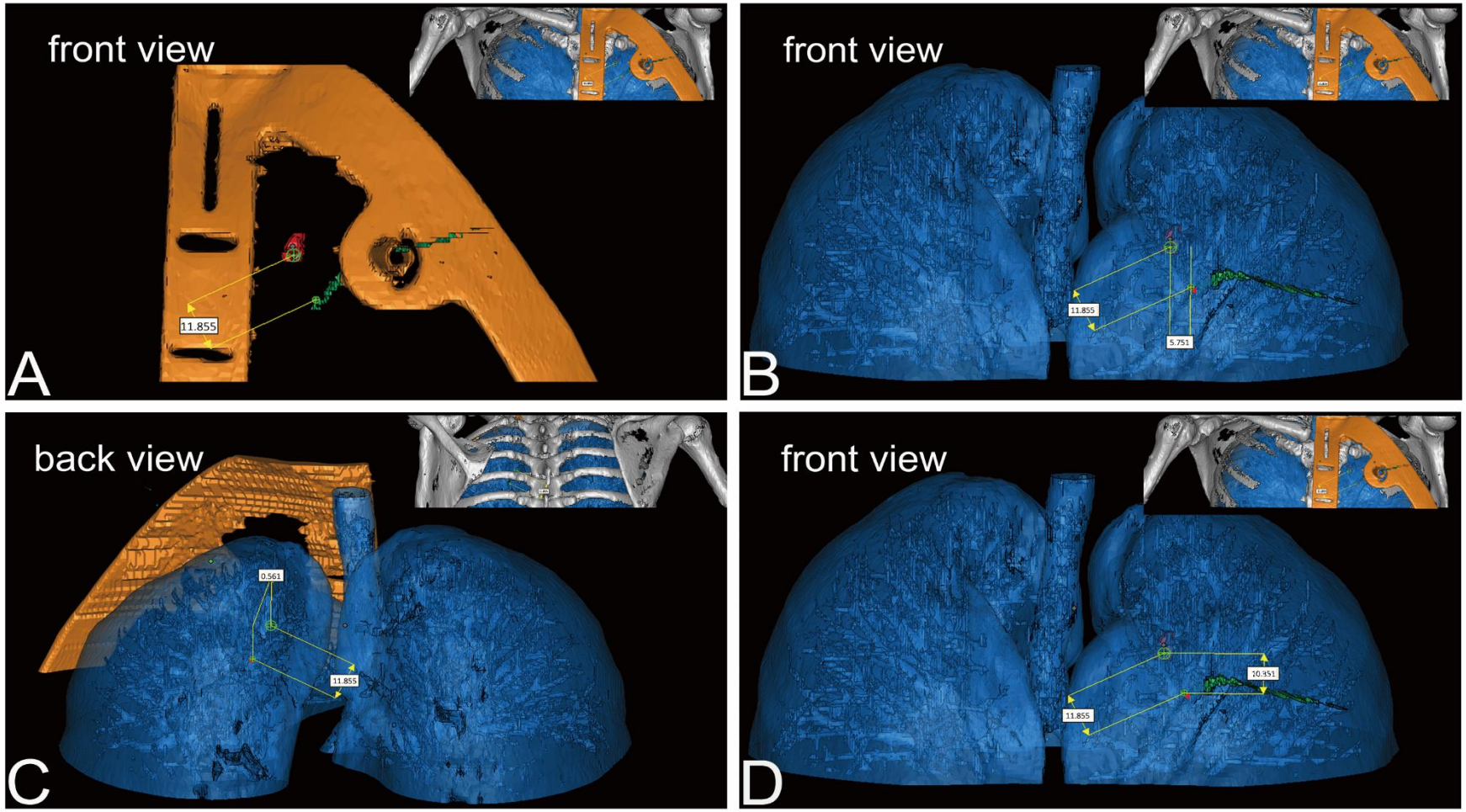
eFigure 1. Design and Printing of the Navigational Template. A, target nodule shown on the CT scan; B, pre-specified inserting route of the localizer; C, virtual model of the template; D, 3D-printed navigational template. Red arrows indicate the target nodule.



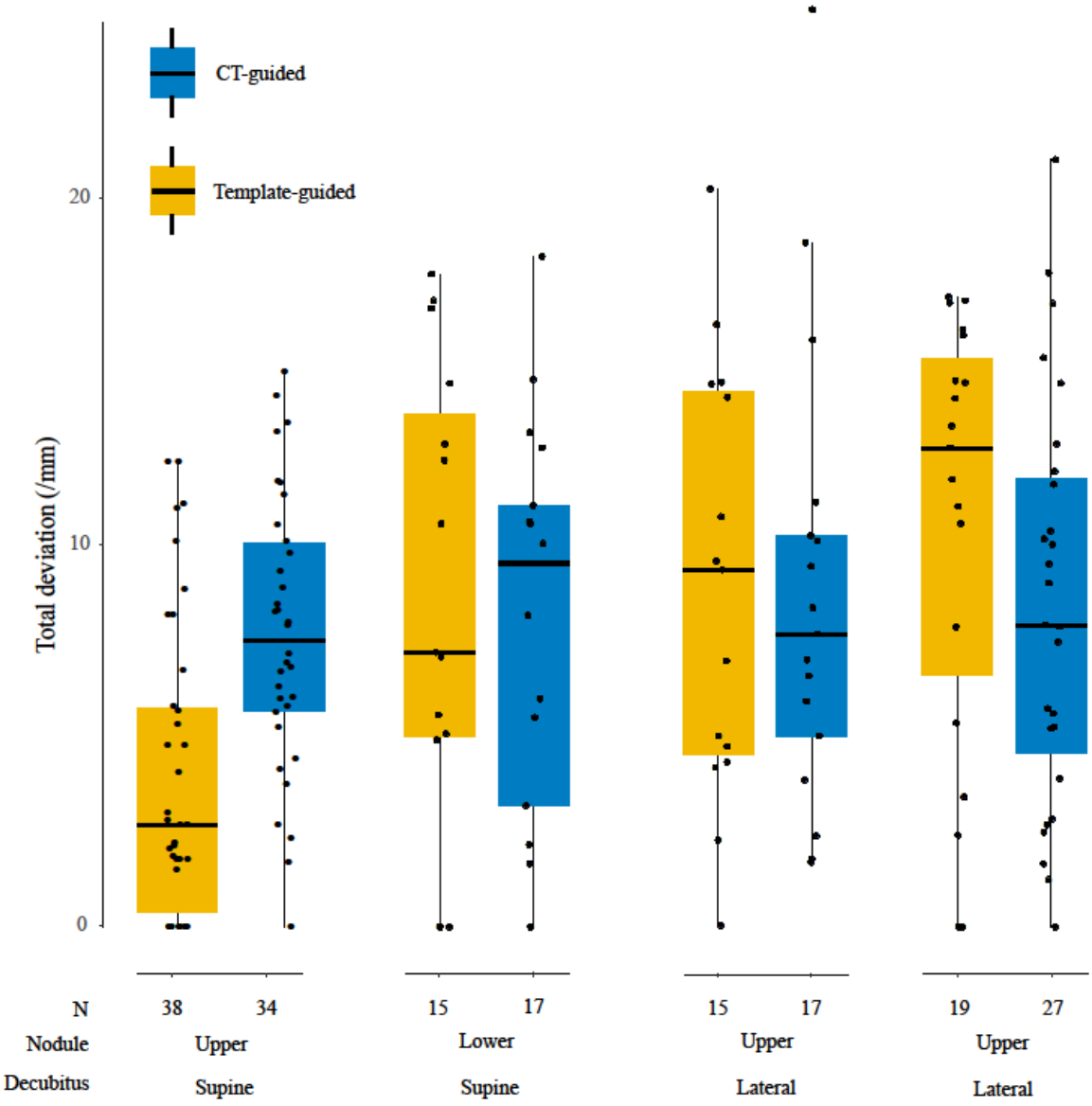
eFigure 2. Representative Images of Localizer Deviation. A, localizer (pointed by the red arrow); B, target nodule (pointed by the red arrow); C, reconstruction of CT scan after nodule localization. For demonstration purpose, nodule localization with relatively a large deviation of 15 mm was chosen.



eFigure 3. Measurement of Localizer Deviation in 3-D by Tomographic Reconstruction. A. overview of the relative position between the target nodule and the localizer; B, measurement of coronal deviation; C, measurement of anterior-posterior deviation; D, measurement of vertical deviation.



eFigure 4. Subgroup Analysis of Localizer Deviation by Patients' Positions and Nodules' Locations in Template-Guided Lung Nodule Localization. Nodules were described in the upper or lower field of the lung, which were separated by the carina of the trachea.



eTable. Comparison of Frozen Section Analysis and Final Pathology

Frozen section analysis	Final pathology				
	benign (n=13)	AAH (n=17)	AIS (n=84)	MIA (n=35)	IA (n=41)
Benign (n=15)	13	1	1	0	0
AAH (n=18)	0	15	3	0	0
AIS (n=82)	0	1	78	3	0
MIA (n=34)	0	0	2	31	1
IA (n=41)	0	0	0	1	40

Note: AAH, atypical adenomatous hyperplasia; AIS, adenocarcinoma in situ; MIA, minimally invasive adenocarcinoma IA, invasive adenocarcinoma.