APPENDIX

Table A1. Definition of computer-extracted image radiomics phenotypes

Radiomic category	Image phenotype	Description
Size	Volume (mm^3)	Volume of lesion
	Effective diameter (mm)	Diameter of a sphere with the same volume as the lesion
	Surface area (mm^2)	Lesion surface area
	Maximum linear size (mm)	Maximum distance between any two voxels in the lesion
Shape	Sphericity	Similarity of the lesion shape to a sphere
	Irregularity	Deviation of the lesion surface from the surface of a sphere
	Surface area/volume (1/mm)	Ratio of surface area to volume
Morphology	Margin sharpness	Mean of the image gradient at the lesion margin
	Variance of margin sharpness	Variance of the image gradient at the lesion margin
	Variance of radial gradient histogram	Degree to which the enhancement structure extends in a radial pattern originating from the center of the lesion
Enhancement Texture	Contrast	Local image variations
	Correlation	Image linearity
	Difference entropy	Randomness of the difference of neighboring voxels' gray-levels
	Difference variance	Variations of difference of gray-levels between voxel-pairs
	Angular second moment (Energy)	Image homogeneity
	Entropy	Randomness of the gray-levels
	Inverse difference moment	Image homogeneity
	Information measure of correlation (IMC) 1	Nonlinear gray-level dependence
	Information measure of correlation (IMC) 2	Nonlinear gray-level dependence
	Maximum correlation coefficient	Nonlinear gray-level dependence
	Sum average	Overall brightness
	Sum entropy	Randomness of the sum of gray-levels of neighboring voxels
	Sum variance	Spread in the sum of the gray-levels of voxel-pairs distribution
	Sum of squares (Variance)	Spread in the gray-level distribution
Kinetic Curve Assessment	Maximum enhancement	Maximum contrast enhancement
	Time to peak (s)	Time at which the maximum enhancement occurs
	Uptake rate (1/s)	Uptake speed of the contrast enhancement
	Washout rate (1/s)	Washout speed of the contrast enhancement
	Curve shape index	Difference between late and early enhancement
	Enhancement at first post-contrast time point	Enhancement at first post-contrast time point
	Signal enhancement ratio	Ratio of initial enhancement to overall enhancement