Table S1. Feature Type and Associated Features

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| Feature Type | Methods | Feature name |
| Morphology -based |  | Maximum3Ddiameter (M3D)Maximum2DDiameterSlice (M2DS)SphericityMinorAxis(MA)ElongationSurfaceVolumeRatio (SVR)VolumeMajorAxis(MA1)SurfaceArea(SA)FlatnessLeastAxis(LA)Maximum2DDiameterColumn (M2DC)Maximum2DDiameterRow (M2DR) |
| First order-based | Histogram | InterquartileRange (IQR)SkewnessUniformityMedianEnergyRobustMeanAbsoluteDeviation (RMAD)MeanAbsoluteDeviation (MAD)TotalEnergy(TE)MaximumRootMeanSquared (RMS)90PercentileMinimumEntropyRangeVariance10PercentileKurtosisMean |
| Texture-based | GLCM | JointAverage(JA)SumAverage(SA)JointEntropy(JE)ClusterShade(CS)MaximumProbability(MP)IdmnJointEnergy(JE)ContrastDifferenceEntropy(DE)InverseVariance(IV)DifferenceVariance(DV)IdnIdmCorrelationAutocorrelationSumEntropy(SE)SumSquares(SS)ClusterProminence(CP)Imc2Imc1DifferenceAverage(DA)IdClusterTendency(CT) |
|   | GLSZM | GrayLevelVariance(GLV)ZoneVariance(ZV)GrayLevelNonUniformityNormalized(GLNUN)　SizeZoneNonUniformityNormalized(SZNUN)SizeZoneNonUniformity(SZNU)GrayLevelNonUniformity(GLNU)LargeAreaEmphasis(LAE)SmallAreaHighGrayLevelEmphasis(SAHGLE)ZonePercentage(ZP)LargeAreaLowGrayLevelEmphasis(LALGLE)LargeAreaHighGrayLevelEmphasis(LAHGLE)HighGrayLevelZoneEmphasis(HGLZE)SmallAreaEmphasis(SAE)LowGrayLevelZoneEmphasis(LGLZE)ZoneEntropy(ZE)SmallAreaLowGrayLevelEmphasis(SALGLE) |
|  | GLRLM | ShortRunLowGrayLevelEmphasis(SRLGLE)GrayLevelVariance(GLV)LowGrayLevelRunEmphasis(LGLRE)GrayLevelNonUniformityNormalized(GLNUN)RunVariance(RV)GrayLevelNonUniformity(GLNU)LongRunEmphasis(LRE)ShortRunHighGrayLevelEmphasis(SRHGLE)RunLengthNonUniformity(RLNU)ShortRunEmphasis(SRE)LongRunHighGrayLevelEmphasis(LRHGLE)RunPercentage(RP)LongRunLowGrayLevelEmphasis(LRLGLE)RunEntropy(RE)HighGrayLevelRunEmphasis(HGLRE)RunLengthNonUniformityNormalized(RLNUN) |
|  | NGTDM | CoarsenessComplexityStrengthContrastBusyness |
|  | GLDM | GrayLevelVariance(GLV)HighGrayLevelEmphasis(HGLE)DependenceEntropy(DE)DependenceNonUniformity(DNU)GrayLevelNonUniformity(GLNU)SmallDependenceEmphasis(SDE)SmallDependenceHighGrayLevelEmphasis(SDHGLE)DependenceNonUniformityNormalized(DNUN)LargeDependenceEmphasis(LDE)LargeDependenceLowGrayLevelEmphasis(LDLGLE)DependenceVariance(DV)LargeDependenceHighGrayLevelEmphasis(LDHGLE)SmallDependenceLowGrayLevelEmphasis(SDLGLE)LowGrayLevelEmphasis(LGLE) |
| LoG-based | First-order statistic and texture of Laplacian of Gaussian (LoG).Filter width: fine, σ=0.5; medium, σ=1.5; coarse, σ=2.5 | First-order featuresGLCM featuresGLSZM featuresGLRLM featuresNGTDM featuresGLDM features |
| Wavelet-based | First-order statistic and texture of wavelet decomposition.Decomposition levels: LLL, LLH, LHL, LHH, HLL, HLH, HHL, HHH. | First-order featuresGLCM featuresGLSZM featuresGLRLM featuresNGTDM featuresGLDM features |

GLCM, [gray-level co-occurrence matrix], describe the second-order joint probability function of the voxel intensities within the contoured volume; GLSZM, [gray-level size-zone matrix], quantify the number of connected voxels within the contoured volume that share the same gray level intensity; GLRLM, [gray-level run-Length matrix], quantify the number of consecutive voxels that have the same gray level value; NGTDM, [neighboring gray-tone difference matrix], quantify the difference between a gray value and the average gray value of its neighbors within 3×3×3 voxels neighborhood window; GLDM, [gray-level dependence matrix], quantify the gray level dependencies in the contoured volume which is defined as the number of connected voxels within a specific distance that are dependent on the center voxel; Decomposition levels , i.e. LLH interpreted as the high-pass sub band, resulting from directional filtering of the volumn with a low-pass filter along x-direction, a low pas filter along y-direction and a high-pass filter along z-direction

Table S2. Baseline characteristics of NPC patient with non-progression disease (NPC-NPD) after IMRT.

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| Characteristic | Number of patients (%) |
| TotalGender Male Female | 1611/16 (69%)5/16 (31%) |
| Age (years) Median (range)AJCC stagingIIIIVa | 48 (39-70 years)15/16 (94%)1/16 (6%) |
| Concurrent Chemotherapy |  |
|  Yes No | 16/16 (100%)0/16 (0%) |
| Radiotherapy technique | IMRT |
| Radiotherapy dose Median | 70Gy (70Gy-74Gy) |