

ON-LINE APPENDIX

The histogram features calculated in this study consisted of the mean, median, SD, range, geometric mean, and harmonic mean of the ROI, which are space-invariant.

In contrast to the histogram features, the GLCM features are highly spatially dependent. The GLCM is square and symmetric with rows and columns from zero to Ng, where Ng represents the number of gray tones in the image. This notation allows the GLCM element in row i and column j to represent the number of times a given gray tone of value i is horizontally adjacent to gray tone j in the original quantized image. Herein, GLCMs were calculated by using only directly adjacent pixels for simplicity, and they used the built-in Matlab function, Graycomatrix. Horizontal, 45°, vertical, and 135° directions were averaged to eliminate any directional dependence.

In addition, the GLRL matrix provides additional insight into a spatial dependence and was created on the basis of the published work of Tang.²² The images were requantized in the texture analysis program by using a standard of 30 gray levels. No smoothing filter was applied to the images in the texture analysis program. The images were normalized by the mean and SD to minimize discrimination by the overall gray-level variation, which is unrelated to local image texture. Similar to GLCM, the GLRL matrix is quantized to Ng gray tones to simplify texture extraction and to yield a more robust technique. The row index i of the GLRL matrix represents the gray tone of value i . In contrast, the column index j is the run-length, which is defined as a number of adjacent and equal-value pixels in a given direction. The value of each element in the GLRL matrix represents the number of pixel line segments (run) with run-length j and gray tone i . The same directions considered in GLCM were averaged for the GLRL matrix. For additional details on the GRLR features, please see the equations below.

Finally, the GLGM was used to provide the histogram of the absolute gradient values in the ROI. As a preprocessing step, the gradient of each pixel within the ROI was computed by using a 3×3 neighborhood. The GLGM features mathematically summarize the gradient values of the pixels in the ROI and include mean, variance, skewness, and kurtosis.

GLCM Features

We tested the following GLCM features proposed by Haralick et al¹:

- 1) Contrast =
$$\sum_{i,j} |i - j|^2 p(i, j)$$
- 2) Correlation =
$$\sum_{i,j} \frac{(i - \mu_i)(j - \mu_j)p(i, j)}{\sigma_i \sigma_j}$$
- 3) Angular Second Moment =
$$\sum_{i,j} p(i, j)^2$$

$$4) \quad \text{Homogeneity} = \sum_{i,j} \frac{p(i, j)}{1 + |i - j|}$$

$$5) \quad \text{Entropy} = \sum_{i,j} \ln[p(i, j)]p(i, j),$$

where $p(i, j)$ represents the (i, j) value of the GLCM.

GLRL Features

The features explored included equations using short-run emphasis (SRE), long-run emphasis (LRE), gray-level nonuniformity (GLN), run-length nonuniformity (RLN), run percentage (RP), low gray-level run emphasis (LGRE), high gray-level run emphasis (HGRE), short-run low gray-level emphasis (SRLGE), short-run high gray-level emphasis (SRHGE), long-run low gray-level emphasis (LRLGE), and long-run high gray-level emphasis (LRHGE), defined as follows:

$$6) \quad \text{SRE} = \frac{1}{n_r} \sum_{i,j} \frac{p(i, j)}{j^2}$$

$$7) \quad \text{LRE} = \frac{1}{n_r} \sum_{i,j} p(i, j)j^2$$

$$8) \quad \text{GLN} = \frac{1}{n_r} \sum_i \left[\sum_j p(i, j) \right]^2$$

$$9) \quad \text{RLN} = \frac{1}{n_r} \sum_j \left[\sum_i p(i, j) \right]^2$$

$$10) \quad \text{RP} = \frac{n_r}{n_p}$$

$$11) \quad \text{LGRE} = \frac{1}{n_r} \sum_{i,j} \frac{p(i, j)}{i^2}$$

$$12) \quad \text{HGRE} = \frac{1}{n_r} \sum_{i,j} p(i, j)i^2$$

$$13) \quad \text{SRLGE} = \frac{1}{n_r} \sum_{i,j} \frac{p(i, j)}{i^2 j^2}$$

$$14) \quad \text{SRHGE} = \frac{1}{n_r} \sum_{i,j} \frac{p(i, j)i^2}{j^2}$$

$$15) \quad \text{LRLGE} = \frac{1}{n_r} \sum_{i,j} \frac{p(i, j)j^2}{i^2}$$

$$16) \quad \text{LRHGE} = \sum_{i,j} p(i, j)i^2 j^2,$$

where $p(i, j)$ represents the (i, j) value of the GLRL matrix, n_r is the total number of runs, and n_p is the total number of pixels.

On-line Table 1: Summary of statistically significant changes in the texture features with variations in CT parameters^a

Texture Parameter	16-MDCT vs 64-MDCT	mA	kV	Section Thickness	Pitch	Acquisition Mode (16-MDCT)	Acquisition Mode (64-MDCT)
Histogram (<i>n</i> = 13)	3 (23)	0 (0)	0 (0)	9 (69)	0 (0)	5 (38)	4 (31)
	Range, 2nd SD, SD5			Median, SD, range, harmonic mean, 2nd SD, SD5, SD9, 4th moment, IQR		Range, harmonic mean, 2nd SD, SD5, SD9	Harmonic mean, 2nd SD, SD5, SD9
GLCM (<i>n</i> = 5)	1 (20)	0 (0)	0 (0)	5 (100)	0 (0)	1 (20)	0 (0)
	Correlation			Entropy, contrast, correlation, energy, homogeneity		Homogeneity	
GLRL (<i>n</i> = 11)	0 (0)	0 (0)	0 (0)	7 (64)	0 (0)	7 (64)	4 (36)
				SRE, LRE, GLN, RLN, SRHGE, LRLGE, LRHGE		SRE, LRE, GLN, RLN, SRHGE, LRLGE, LRHGE	SRE, LRE, GLN, RLN
Law features (<i>n</i> = 9)	9 (100)	0 (0)	0 (0)	9 (100)	1 (11)	9 (100)	9 (100)
	L1, L2, L3, L4, L5, L6, L7, L8, L9			L1, L2, L3, L4, L5, L6, L7, L8, L9		L1, L2, L3, L4, L5, L6, L7, L8, L9	L1, L2, L3, L4, L5, L6, L7, L8, L9
GLGM (<i>n</i> = 4)	0 (0)	0 (0)	0 (0)	4 (100)	0 (0)	0 (0)	1 (25)
				MGR, VGR, skewness, kurtosis			MGR

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; SRE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRLGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

^a Data are presented as the number of texture parameters with percentages in parentheses. Statistically significant with the 2-tailed *t* test and false detection analyses (*Q* < 0.05).

On-line Table 2: Texture parameters by MDCT type

	16-Detector Row (n = 7)		64-Detector Row (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD		
Histogram						
Mean	231.25	11.67	222.81	17.47	.309	0.447
Median	225.71	6.80	218.14	11.19	.152	0.319
SD	152.21	23.31	147.36	28.07	.731	0.788
Range	42.64	1.31	46.79	2.87	.005	0.018
Geometric mean	206.49	10.56	197.38	15.78	.229	0.431
Harmonic mean	149.84	5.10	141.97	7.88	.047	0.125
2nd SD	14.58	0.44	15.99	0.97	.004	0.018
SD5	23.76	0.74	25.95	1.56	.006	0.020
SD9	39.99	1.37	42.96	2.55	.019	0.056
4th Moment	3.24E+09	1.56E+09	3.07E+09	1.84E+09	.858	0.858
IQR	143.29	11.16	144.71	13.82	.835	0.856
Entropy	7.05	0.08	7.00	0.11	.356	0.483
Test	0.72	0.33	0.52	0.35	.287	0.431
GLCM						
Entropy	1.14	0.10	1.20	0.10	.278	0.431
Contrast	1.96	0.19	2.23	0.26	.048	0.125
Correlation	0.98	0.002	0.98	0.003	.012	0.039
Energy	0.02	0.002	0.02	0.002	.475	0.569
Homogeneity	0.70	0.02	0.68	0.01	.057	0.141
GLRL						
SRE	0.06	0.01	0.07	0.01	.393	0.506
LRE	0.06	0.01	0.07	0.01	.424	0.524
GLN	0.06	0.005	0.06	0.01	.277	0.431
RLN	0.06	0.01	0.07	0.01	.398	0.506
RP	90.03	8.46	84.18	12.48	.325	0.454
LGRE	88.22	8.89	81.69	11.73	.263	0.431
HGRE	92.90	9.17	85.38	11.68	.205	0.411
SRLGE	88.31	7.95	82.02	11.74	.263	0.431
SRHGE	1.35E+04	1.22E+03	1.53E+04	2.36E+03	.099	0.222
LRLGE	2.37E+04	1.76E+03	2.57E+04	3.88E+03	.249	0.431
LRHGE	1.32E+04	926.28	1.48E+04	2.19E+03	.100	0.222
Law features						
L1	2.31E+05	5.91E+03	2.66E+05	1.41E+04	<.0001	0.001
L2	1.56E+04	312.58	2.08E+04	777.47	<.0001	0.001
L3	6.57E+03	187.63	8.70E+03	371.65	<.0001	0.001
L4	5.26E+04	1.16E+03	6.45E+04	2.84E+03	<.0001	0.001
L5	2.55E+03	67.97	3.40E+03	115.48	<.0001	0.001
L6	1.23E+03	6.85	1.38E+03	19.14	<.0001	0.001
L7	1.57E+03	46.55	2.21E+03	87.39	<.0001	0.001
L8	4.19E+03	42.91	4.34E+03	79.31	.001	0.006
L9	2.88E+04	783.34	3.56E+04	1.67E+03	<.0001	0.001
GLGM						
MGR	25.35	3.42	25.79	1.83	.768	0.806
VGR	7.93E+03	2.10E+03	8.50E+03	1.85E+03	.596	0.695
Skewness	9.26	2.41	8.69	2.04	0.643	0.710
Kurtosis	178.94	84.50	158.00	66.21	0.615	0.698

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 3: Texture parameters by scan milliampere

	80 (n = 7)		100 (n = 7)		120 (n = 7)		140 (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Histogram										
Mean	222.54	13.93	224.31	16.88	224.97	16.55	222.81	17.47	.990	1.000
Median	218.71	9.53	219.57	11.31	221.00	11.80	218.14	11.19	.965	1.000
SD	147.00	25.42	150.56	27.58	147.26	24.08	147.36	28.07	.993	1.000
Range	46.40	1.72	46.86	2.28	46.86	2.10	46.79	2.87	.978	1.000
Geometric mean	197.84	13.74	199.98	15.89	201.06	17.05	197.38	15.78	.966	1.000
Harmonic mean	143.31	8.77	145.45	9.39	147.56	12.73	141.97	7.88	.732	1.000
2nd SD	15.86	0.59	16.02	0.77	16.02	0.72	15.99	0.97	.976	1.000
SD5	25.73	0.94	25.98	1.25	25.98	1.13	25.95	1.56	.977	1.000
SD9	42.62	1.48	43.02	2.06	43.03	1.78	42.96	2.55	.977	1.000
4th Moment	3.15E+09	1.83E+09	3.40E+09	2.01E+09	3.07E+09	1.65E+09	3.07E+09	1.84E+09	.984	1.000
IQR	143.00	10.80	144.29	14.16	143.29	10.80	144.71	13.82	.993	1.000
Entropy	6.99	0.09	6.98	0.12	6.99	0.11	7.00	0.11	.982	1.000
Test	0.52	0.33	0.52	0.19	0.53	0.30	0.52	0.35	1.000	1.000
GLCM										
Entropy	1.19	0.08	1.16	0.09	1.19	0.09	1.20	0.10	.865	1.000
Contrast	2.16	0.16	2.16	0.28	2.18	0.27	2.23	0.26	.941	1.000
Correlation	0.98	0.003	0.98	0.003	0.98	0.003	0.98	0.003	.990	1.000
Energy	0.02	0.002	0.02	0.002	0.02	0.001	0.02	0.002	.913	1.000
Homogeneity	0.68	0.01	0.69	0.01	0.68	0.01	0.68	0.01	.915	1.000
GLRL										
SRE	0.06	0.004	0.07	0.01	0.06	0.01	0.07	0.01	.756	1.000
LRE	0.07	0.004	0.07	0.005	0.07	0.01	0.07	0.01	.813	1.000
GLN	0.06	0.003	0.07	0.005	0.06	0.01	0.06	0.01	.861	1.000
RLN	0.07	0.004	0.07	0.005	0.07	0.01	0.07	0.01	.801	1.000
RP	83.07	8.39	81.97	13.32	83.62	13.04	84.18	12.48	.988	1.000
LGRE	80.79	8.17	79.50	12.90	81.29	12.47	81.69	11.73	.986	1.000
HGRE	84.34	8.11	83.41	13.27	85.03	12.64	85.38	11.68	.989	1.000
SRLGE	81.06	8.34	80.14	12.98	81.48	12.41	82.02	11.74	.992	1.000
SRHGE	1.53E+04	2.24E+03	1.45E+04	1.14E+03	1.47E+04	2.17E+03	1.53E+04	2.36E+03	.830	1.000
LRLGE	2.58E+04	3.58E+03	2.43E+04	1.47E+03	2.50E+04	3.33E+03	2.57E+04	3.88E+03	.806	1.000
LRHGE	1.48E+04	2.31E+03	1.37E+04	850.82	1.43E+04	1.87E+03	1.48E+04	2.19E+03	.656	1.000
Law features										
L1	2.64E+05	8.61E+03	2.66E+05	1.16E+04	2.67E+05	1.00E+04	2.66E+05	1.41E+04	.961	1.000
L2	2.08E+04	596.58	2.09E+04	638.95	21018.64	698.86	2.08E+04	777.47	.948	1.000
L3	8.69E+03	234.37	8.73E+03	305.55	8.76E+03	268.35	8.70E+03	371.65	.965	1.000
L4	6.41E+04	1.84E+03	6.46E+04	2.32E+03	6.49E+04	2.18E+03	6.45E+04	2.84E+03	.948	1.000
L5	3.40E+03	85.01	3.42E+03	70.44	3.41E+03	113.02	3.40E+03	115.48	.982	1.000
L6	1.39E+03	15.78	1.39E+03	14.86	1.39E+03	15.55	1.38E+03	19.14	.974	1.000
L7	2.21E+03	59.10	2.22E+03	66.95	2.23E+03	62.60	2.21E+03	87.39	.966	1.000
L8	4.32E+03	32.91	4.34E+03	88.68	4.31E+03	40.53	4.34E+03	79.31	.843	1.000
L9	3.55E+04	1.03E+03	3.57E+04	1.42E+03	3.58E+04	1.18E+03	3.56E+04	1.67E+03	.969	1.000
GLGM										
MGR	26.03	1.59	25.69	2.60	25.38	1.16	25.79	1.83	.932	1.000
VGR	8.43E+03	1.73E+03	8.61E+03	1.93E+03	8.27E+03	1.44E+03	8.50E+03	1.85E+03	.987	1.000
Skewness	8.56	2.22	9.10	1.69	8.91	2.11	8.69	2.04	.961	1.000
Kurtosis	154.33	71.44	171.57	55.45	169.64	69.26	158.00	66.21	.949	1.000

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 4: Texture parameters by scan kilovolt

	80 (n = 7)		100 (n = 7)		120 (n = 7)		140 (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Histogram										
Mean	223.34	12.98	224.21	15.36	222.81	17.47	226.70	15.00	.965	0.998
Median	219.86	8.28	219.86	10.84	218.14	11.19	220.86	7.93	.962	0.998
SD	144.44	24.97	149.30	25.69	147.36	28.07	152.49	33.53	.959	0.998
Range	46.81	2.04	46.90	2.25	46.79	2.87	46.64	2.21	.998	0.998
Geometric mean	198.18	11.80	199.30	14.73	197.38	15.78	201.32	12.23	.954	0.998
Harmonic mean	144.19	5.61	144.03	8.99	141.97	7.88	145.60	3.55	.801	0.998
2nd SD	16.01	0.69	16.04	0.77	15.99	0.97	15.95	0.74	.997	0.998
SD5	25.94	1.10	26.03	1.24	25.95	1.56	25.86	1.20	.996	0.998
SD9	42.87	1.80	43.12	2.03	42.96	2.55	42.81	2.01	.993	0.998
4th Moment	2.74E+09	1.60E+09	3.24E+09	1.79E+09	3.07E+09	1.84E+09	3.64E+09	2.47E+09	.856	0.998
IQR	142.86	12.02	144.57	11.36	144.71	13.82	145.29	16.93	.989	0.998
Entropy	7.02	0.07	7.03	0.06	7.00	0.11	7.03	0.09	.965	0.998
Test	0.50	0.32	0.50	0.25	0.52	0.35	0.53	0.38	.962	0.998
GLCM										
Entropy	1.23	0.05	1.23	0.07	1.20	0.10	1.22	0.05	.894	0.998
Contrast	2.22	0.19	2.20	0.14	2.23	0.26	2.26	0.15	.996	0.998
Correlation	0.98	0.003	0.98	0.003	0.98	0.003	0.98	0.004	.882	0.998
Energy	0.01	0.001	0.01	0.001	0.02	0.002	0.01	0.001	.941	0.998
Homogeneity	0.68	0.01	0.68	0.01	0.68	0.01	0.68	0.01	.857	0.998
GLRL										
SRE	0.06	0.01	0.06	0.005	0.07	0.01	0.06	0.01	.838	0.998
LRE	0.07	0.01	0.06	0.004	0.07	0.01	0.06	0.01	.913	0.998
GLN	0.06	0.004	0.06	0.003	0.06	0.01	0.06	0.005	.703	0.998
RLN	0.07	0.01	0.06	0.004	0.07	0.01	0.06	0.01	.812	0.998
RP	84.96	7.74	86.18	7.58	84.18	12.48	88.48	9.99	.589	0.998
LGRE	82.69	7.39	84.16	6.97	81.69	11.73	85.86	9.25	.791	0.998
HGRE	86.08	7.45	87.64	6.88	85.38	11.68	89.70	9.21	.850	0.998
SRLGE	82.80	7.14	84.04	6.89	82.02	11.74	86.43	9.37	.837	0.998
SRHGE	1.51E+04	1.62E+03	1.65E+04	1.49E+03	1.53E+04	2.36E+03	1.52E+04	2.26E+03	.814	0.998
LRLGE	2.55E+04	2.55E+03	2.78E+04	2.31E+03	2.57E+04	3.88E+03	2.56E+04	3.82E+03	.809	0.998
LRHGE	1.46E+04	1.68E+03	1.60E+04	1.56E+03	1.48E+04	2.19E+03	1.46E+04	2.23E+03	.480	0.998
Law features										
L1	2.67E+05	8.74E+03	2.67E+05	1.11E+04	2.66E+05	1.41E+04	2.65E+05	9.79E+03	.971	0.998
L2	2.14E+04	653.29	2.10E+04	676.37	2.08E+04	777.47	2.07E+04	597.36	.255	0.998
L3	8.88E+03	256.38	8.76E+03	262.31	8.70E+03	371.65	8.65E+03	302.06	.518	0.998
L4	6.55E+04	1.85E+03	6.50E+04	2.30E+03	6.45E+04	2.84E+03	6.42E+04	1.92E+03	.736	0.998
L5	3.51E+03	76.18	3.41E+03	83.34	3.40E+03	115.48	3.37E+03	114.36	.094	0.998
L6	1.40E+03	18.71	1.39E+03	14.56	1.38E+03	19.14	1.38E+03	17.62	.089	0.998
L7	2.27E+03	65.23	2.23E+03	59.88	2.21E+03	87.39	2.20E+03	81.52	.256	0.998
L8	4.34E+03	38.92	4.33E+03	51.70	4.34E+03	79.31	4.33E+03	56.59	.984	0.998
L9	3.60E+04	1.09E+03	3.58E+04	1.22E+03	3.56E+04	1.67E+03	3.54E+04	1.25E+03	.855	0.998
GLGM										
MGR	24.65	1.77	27.48	2.63	25.79	1.83	25.28	1.25	.065	0.998
VGR	7.89E+03	1.87E+03	8.82E+03	2.01E+03	8.50E+03	1.85E+03	8.36E+03	1.73E+03	.825	0.998
Skewness	8.31	2.11	8.32	2.09	8.69	2.04	8.87	2.48	.952	0.998
Kurtosis	143.77	67.47	149.01	69.82	158.00	66.21	164.57	82.53	.950	0.998

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 5: Texture parameters by section thickness

	0.625 (n = 7)		1.25 (n = 7)		2.5 (n = 7)		5 (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Histogram										
Mean	226.18	3.86	224.19	5.05	220.76	15.07	222.81	17.47	.857	0.857
Median	236.29	2.43	235.86	2.97	228.43	9.32	218.14	11.19	.0004	0.001
SD	193.20	5.60	189.53	11.45	164.39	25.18	147.36	28.07	.001	0.001
Range	81.05	0.77	74.91	2.16	60.35	2.48	46.79	2.87	<.0001	0.0002
Geometric mean	171.93	4.28	174.93	5.68	182.13	14.29	197.38	15.78	.001	0.002
Harmonic mean	90.46	4.23	99.54	5.01	116.02	8.96	141.97	7.88	<.0001	0.0002
2nd SD	27.81	0.26	25.68	0.75	20.67	0.85	15.99	0.97	<.0001	0.0002
SD5	45.27	0.42	41.87	1.17	33.68	1.32	25.95	1.56	<.0001	0.0002
SD9	74.10	0.72	68.96	1.63	55.88	1.95	42.96	2.55	<.0001	0.0002
4th Moment	6.79E+09	7.49E+08	6.73E+09	1.67E+09	4.37E+09	2.37E+09	3.07E+09	1.84E+09	.001	0.001
IQR	225.86	9.30	220.14	12.82	180.14	10.51	144.71	13.82	<.0001	0.0002
Entropy	7.07	0.02	7.02	0.03	7.01	0.09	7.00	0.11	.257	0.277
Test	0.38	0.29	0.44	0.31	0.57	0.39	0.52	0.35	.738	0.756
GLCM										
Entropy	1.21	0.02	1.08	0.06	1.13	0.06	1.20	0.10	.003	0.003
Contrast	4.61	0.16	4.07	0.10	2.99	0.17	2.23	0.26	<.0001	0.0002
Correlation	0.97	0.001	0.97	0.002	0.98	0.004	0.98	0.003	.0002	0.0003
Energy	0.02	0.001	0.02	0.002	0.02	0.001	0.02	0.002	<.0001	0.0002
Homogeneity	0.59	0.002	0.61	0.01	0.64	0.01	0.68	0.01	<.0001	0.0002
GLRL										
SRE	0.09	0.003	0.09	0.01	0.08	0.004	0.07	0.01	<.0001	0.0002
LRE	0.10	0.003	0.09	0.01	0.08	0.004	0.07	0.01	<.0001	0.0002
GLN	0.09	0.003	0.09	0.005	0.08	0.003	0.06	0.01	<.0001	0.0002
RLN	0.10	0.003	0.09	0.01	0.08	0.004	0.07	0.01	<.0001	0.0002
RP	92.17	2.58	89.16	3.79	84.19	9.66	84.18	12.48	.214	0.236
LGRE	89.55	2.44	86.81	3.46	81.80	9.23	81.69	11.73	.183	0.208
HGRE	91.91	2.51	89.73	3.68	85.78	9.50	85.38	11.68	.357	0.374
SRLGE	90.50	2.71	87.76	3.65	82.33	9.71	82.02	11.74	.152	0.178
SRHGE	3.47E+04	2.24E+03	3.18E+04	1.28E+03	2.23E+04	1.32E+03	1.53E+04	2.36E+03	<.0001	0.0002
LRLGE	4.84E+04	2.47E+03	4.46E+04	2.25E+03	3.40E+04	2.35E+03	2.57E+04	3.88E+03	<.0001	0.0002
LRHGE	3.46E+04	1.71E+03	3.14E+04	1.50E+03	2.17E+04	1.60E+03	1.48E+04	2.19E+03	<.0001	0.0002
Law features										
L1	5.11E+05	5.80E+03	4.64E+05	1.80E+04	3.62E+05	1.38E+04	2.66E+05	1.41E+04	<.0001	0.0002
L2	4.30E+04	468.96	3.77E+04	1.82E+03	2.84E+04	1.12E+03	2.08E+04	777.47	<.0001	0.0002
L3	1.82E+04	290.69	1.60E+04	767.33	1.19E+04	474.85	8.70E+03	371.65	<.0001	0.0002
L4	1.29E+05	1.61E+03	1.16E+05	5.03E+03	8.83E+04	3.47E+03	6.45E+04	2.84E+03	<.0001	0.0002
L5	6.68E+03	102.17	5.92E+03	229.47	4.49E+03	150.24	3.40E+03	115.48	<.0001	0.0002
L6	2.13E+03	23.38	1.93E+03	66.70	1.61E+03	37.98	1.38E+03	19.14	<.0001	0.0002
L7	4.67E+03	75.08	4.08E+03	201.21	3.02E+03	121.06	2.21E+03	87.39	<.0001	0.0002
L8	5.60E+03	39.94	5.34E+03	127.68	4.78E+03	78.19	4.34E+03	79.31	<.0001	0.0002
L9	7.17E+04	1.06E+03	6.43E+04	2.89E+03	4.85E+04	1.83E+03	3.56E+04	1.67E+03	<.0001	0.0002
GLGM										
MGR	44.51	2.63	41.88	2.55	31.67	2.08	25.79	1.83	<.0001	0.0002
VGR	2.07E+04	1.03E+03	1.89E+04	1.71E+03	1.20E+04	1.96E+03	8.50E+03	1.85E+03	<.0001	0.0002
Skewness	5.26	0.30	5.85	0.57	6.61	1.39	8.69	2.04	.0002	0.0003
Kurtosis	51.76	6.14	67.12	15.30	89.31	41.61	158.00	66.21	.0002	0.0003

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 6: Texture parameters by pitch

	0.51 (n = 7)		0.98 (n = 7)		1.37 (n = 7)		1.75 (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Histogram										
Mean	222.19	15.36	222.81	17.47	221.15	15.16	223.34	14.11	.994	0.999
Median	218.29	10.48	218.14	11.19	218.00	10.15	219.57	8.46	.991	0.999
SD	147.30	25.93	147.36	28.07	143.03	26.58	148.55	29.04	.983	0.999
Range	45.99	2.00	46.79	2.87	46.21	1.96	46.97	1.70	.809	0.999
Geometric mean	197.57	14.62	197.38	15.78	196.77	15.29	197.84	12.80	.999	0.999
Harmonic mean	143.11	8.55	141.97	7.88	143.31	10.17	141.71	6.08	.978	0.999
2nd SD	15.73	0.68	15.99	0.97	15.80	0.67	16.07	0.58	.805	0.999
SD5	25.55	1.09	25.95	1.56	25.64	1.07	26.07	0.93	.819	0.999
SD9	42.40	1.81	42.96	2.55	42.48	1.74	43.22	1.54	.836	0.999
4th Moment	3.14E+09	1.82E+09	3.07E+09	1.84E+09	2.90E+09	1.98E+09	3.29E+09	2.25E+09	.986	0.999
IQR	143.29	11.70	144.71	13.82	140.71	12.07	144.29	13.89	.938	0.999
Entropy	6.99	0.09	7.00	0.11	6.98	0.06	7.03	0.06	.782	0.999
Test	0.28	0.28	0.52	0.35	0.58	0.22	0.45	0.26	.257	0.999
GLCM										
Entropy	1.18	0.07	1.20	0.10	1.20	0.08	1.23	0.06	.661	0.999
Contrast	2.10	0.20	2.23	0.26	2.14	0.16	2.22	0.14	.562	0.999
Correlation	0.98	0.003	0.98	0.003	0.98	0.003	0.98	0.003	.849	0.999
Energy	0.02	0.002	0.02	0.002	0.02	0.002	0.01	0.001	.767	0.999
Homogeneity	0.69	0.01	0.68	0.01	0.68	0.02	0.68	0.02	.704	0.999
GLRL										
SRE	0.06	0.004	0.07	0.01	0.06	0.01	0.06	0.005	.895	0.999
LRE	0.07	0.003	0.07	0.01	0.07	0.01	0.07	0.004	.943	0.999
GLN	0.06	0.003	0.06	0.01	0.06	0.004	0.06	0.002	.885	0.999
RLN	0.07	0.004	0.07	0.01	0.07	0.005	0.07	0.004	.919	0.999
RP	82.89	9.45	84.18	12.48	82.49	7.37	86.35	6.67	.863	0.999
LGRE	80.64	9.08	81.69	11.73	80.40	7.32	83.80	6.86	.889	0.999
HGRE	84.42	9.27	85.38	11.68	84.11	7.73	87.79	7.00	.872	0.999
SRLGE	81.13	9.20	82.02	11.74	80.62	6.80	84.31	6.46	.867	0.999
SRHGE	1.60E+04	1.78E+03	1.53E+04	2.36E+03	1.63E+04	1.94E+03	1.59E+04	1.98E+03	.812	0.999
LRLGE	2.69E+04	2.82E+03	2.57E+04	3.88E+03	2.75E+04	3.55E+03	2.65E+04	3.30E+03	.787	0.999
LRHGE	1.53E+04	1.77E+03	1.48E+04	2.19E+03	1.58E+04	2.04E+03	1.54E+04	1.80E+03	.807	0.999
Law features										
L1	2.62E+05	10059.92	2.66E+05	1.41E+04	2.64E+05	1.04E+04	2.69E+05	9.57E+03	.659	0.999
L2	2.04E+04	561.29	2.08E+04	777.47	2.09E+04	669.74	2.14E+04	687.56	.084	0.885
L3	8.51E+03	244.15	8.70E+03	371.65	8.70E+03	262.35	8.89E+03	236.92	.122	0.999
L4	6.35E+04	2.05E+03	6.45E+04	2.84E+03	6.43E+04	2.26E+03	6.57E+04	2.16E+03	.403	0.999
L5	3.30E+03	74.56	3.40E+03	115.48	3.40E+03	99.87	3.47E+03	75.56	.021	0.287
L6	1.36E+03	12.78	1.38E+03	19.14	1.38E+03	12.08	1.40E+03	12.94	.001	0.034
L7	2.14E+03	55.46	2.21E+03	87.39	2.21E+03	59.43	2.27E+03	52.65	.014	0.287
L8	4.31E+03	66.54	4.34E+03	79.31	4.29E+03	47.24	4.33E+03	54.47	.530	0.999
L9	3.50E+04	1.16E+03	3.56E+04	1.67E+03	3.55E+04	1.22E+03	3.62E+04	1.10E+03	.402	0.999
GLGM										
MGR	27.39	2.14	25.79	1.83	27.17	2.24	25.99	2.10	.384	0.999
VGR	8.65E+03	1.75E+03	8.50E+03	1.85E+03	8.56E+03	2.14E+03	8.39E+03	2.14E+03	.996	0.999
Skewness	8.36	2.28	8.69	2.04	8.04	2.47	8.26	2.79	.965	0.999
Kurtosis	149.96	73.40	158.00	66.21	138.16	78.94	146.34	91.03	.971	0.999

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 7: Texture parameters by scan type at 16-detector row CT

	Axial (n = 7)		Helical (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD		
Histogram						
Mean	221.27	15.40	231.25	11.67	.197	0.259
Median	221.57	11.72	225.71	6.80	.434	0.471
SD	150.92	22.99	152.21	23.31	.919	0.919
Range	47.13	2.84	42.64	1.31	.003	0.006
Geometric mean	190.27	14.70	206.49	10.56	.035	0.062
Harmonic mean	129.95	11.22	149.84	5.10	.001	0.004
2nd SD	16.12	0.97	14.58	0.44	.002	0.006
SD5	26.29	1.57	23.76	0.74	.002	0.006
SD9	44.12	2.58	39.99	1.37	.003	0.006
4th Moment	3.14E+09	1.77E+09	3.24E+09	1.56E+09	.918	0.919
IQR	153.57	10.01	143.29	11.16	.095	0.147
Entropy	7.04	0.07	7.05	0.08	.859	0.902
Test	0.54	0.36	0.72	0.33	.344	0.425
GLCM						
Entropy	1.21	0.08	1.14	0.10	.171	0.232
Contrast	2.21	0.24	1.96	0.19	.051	0.085
Correlation	0.98	0.002	0.98	0.002	.071	0.114
Energy	0.01	0.001	0.02	0.002	.131	0.183
Homogeneity	0.68	0.01	0.70	0.02	.012	0.023
GLRL						
SRE	0.07	0.003	0.06	0.01	.004	0.008
LRE	0.07	0.004	0.06	0.01	.004	0.008
GLN	0.07	0.003	0.06	0.005	.002	0.005
RLN	0.07	0.004	0.06	0.01	.003	0.006
RP	86.65	7.21	90.03	8.46	.437	0.471
LGRE	84.23	7.02	88.22	8.89	.369	0.431
HGRE	88.66	7.31	92.90	9.17	.358	0.430
SRLGE	84.74	7.08	88.31	7.95	.392	0.445
SRHGE	1.83E+04	1.93E+03	1.35E+04	1.22E+03	.0001	0.001
LRLGE	3.05E+04	3.04E+03	2.37E+04	1.76E+03	.0003	0.001
LRHGE	1.78E+04	1.99E+03	1.32E+04	926.28	.0001	0.001
Law features						
L1	2.64E+05	1.58E+04	2.31E+05	5.91E+03	.0002	0.001
L2	1.76E+04	829.55	1.56E+04	312.58	<.0001	0.001
L3	7.59E+03	412.90	6.57E+03	187.63	<.0001	0.001
L4	6.08E+04	3.35E+03	5.26E+04	1.16E+03	<.0001	0.001
L5	2.77E+03	120.06	2.55E+03	67.97	.001	0.004
L6	1.25E+03	14.18	1.23E+03	6.85	.001	0.003
L7	1.77E+03	87.85	1.57E+03	46.55	.0002	0.001
L8	4.34E+03	66.12	4.19E+03	42.91	.0004	0.002
L9	3.35E+04	1.93E+03	2.88E+04	783.34	<.0001	0.001
GLGM						
MGR	29.43	2.65	25.35	3.42	.028	0.052
VGR	9.22E+03	2.20E+03	7.93E+03	2.10E+03	.282	0.359
Skewness	7.23	2.00	9.26	2.41	.112	0.162
Kurtosis	110.18	60.68	178.94	84.50	.106	0.159

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.

On-line Table 8: Texture parameters by scan type at 64-detector row CT

	Axial (n = 7)		Helical (n = 7)		P Value	Q Value
	Mean	SD	Mean	SD		
Histogram						
Mean	219.82	13.32	222.81	17.47	.725	0.762
Median	219.86	9.30	218.14	11.19	.761	0.779
SD	152.85	22.17	147.36	28.07	.692	0.745
Range	52.76	2.64	46.79	2.87	.002	0.005
Geometric mean	188.31	12.17	197.38	15.78	.251	0.369
Harmonic mean	127.41	6.92	141.97	7.88	.003	0.008
2nd SD	18.04	0.91	15.99	0.97	.002	0.005
SD5	29.31	1.47	25.95	1.56	.001	0.004
SD9	48.49	2.39	42.96	2.55	.001	0.004
4th Moment	3.56E+09	1.61E+09	3.07E+09	1.84E+09	.608	0.672
IQR	153.29	11.12	144.71	13.82	.225	0.364
Entropy	6.96	0.10	7.00	0.11	.467	0.559
Test	0.52	0.27	0.52	0.35	.986	0.986
GLCM						
Entropy	1.15	0.07	1.20	0.10	.255	0.369
Contrast	2.44	0.26	2.23	0.26	.161	0.271
Correlation	0.98	0.003	0.98	0.003	.239	0.369
Energy	0.02	0.001	0.02	0.002	.527	0.598
Homogeneity	0.67	0.01	0.68	0.01	.032	0.067
GLRL						
SRE	0.08	0.005	0.07	0.01	.002	0.006
LRE	0.08	0.005	0.07	0.01	.001	0.003
GLN	0.08	0.004	0.06	0.01	.001	0.004
RLN	0.08	0.004	0.07	0.01	.001	0.003
RP	77.93	10.70	84.18	12.48	.335	0.426
LGRE	75.46	10.38	81.69	11.73	.314	0.412
HGRE	79.00	10.25	85.38	11.68	.299	0.405
SRLGE	75.44	10.19	82.02	11.74	.285	0.399
SRHGE	1.73E+04	1.28E+03	1.53E+04	2.36E+03	.063	0.120
LRLGE	2.84E+04	1.49E+03	2.57E+04	3.88E+03	.126	0.220
LRHGE	1.69E+04	1.07E+03	1.48E+04	2.19E+03	.041	0.081
Law features						
L1	3.06E+05	1.55E+04	2.66E+05	1.41E+04	.0003	0.002
L2	2.40E+04	915.74	2.08E+04	777.47	<.0001	0.001
L3	1.01E+04	480.82	8.70E+03	371.65	<.0001	0.001
L4	7.46E+04	3.34E+03	6.45E+04	2.84E+03	<.0001	0.001
L5	3.83E+03	171.48	3.40E+03	115.48	.0001	0.001
L6	1.47E+03	31.27	1.38E+03	19.14	<.0001	0.001
L7	2.55E+03	121.83	2.21E+03	87.39	<.0001	0.001
L8	4.50E+03	84.01	4.34E+03	79.31	.003	0.007
L9	4.12E+04	2.01E+03	3.56E+04	1.67E+03	.0001	0.001
GLGM						
MGR	28.69	1.95	25.79	1.83	.014	0.031
VGR	1.02E+04	1.77E+03	8.50E+03	1.85E+03	.114	0.207
Skewness	8.01	1.27	8.69	2.04	.469	0.559
Kurtosis	136.79	38.91	158.00	66.21	.479	0.559

Note:—SD5 indicates 5-neighborhood SD; SD9, 9-neighborhood SD; IQR, interquartile range; HGRE, high gray-level run emphasis; LGRE, low gray-level run emphasis; SRLGE, short-run low gray-level emphasis; SRHGE, short-run high gray-level emphasis; SRE, short-run emphasis; LRE, long-run emphasis; GLN, gray-level nonuniformity; RLN, run-length nonuniformity; LRLGE, long-run low gray-level emphasis; LRHGE, long-run high gray-level emphasis; MGR, mean gradients; VGR, variance of gradients.