Supplementary Table 1.
Radiotherapy characteristics.
Descriptors of the radiotherapy treatment courses are listed for the patient cohort. Dose-volume histogram characteristics, such as mean dose, D_2, D_{98} were calculated after regions of interest (brain, temporal lobe, hippocampus) were censored to exclude the gross tumor volume.
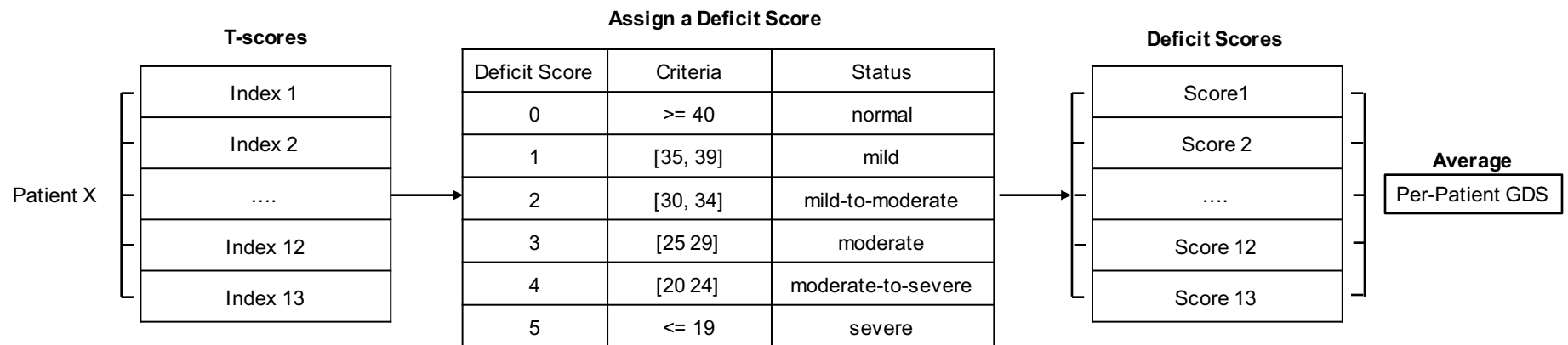
Radiotherapy Characteristic	Patient Cohort, n = 37
Treatment type: n[%]	
Photons	27 [73%]
Protons	10 [27%]
Prescription dose: Gy	
Median	59.4
Interquartile range	54-59.4
Dose schedule: n [%]	
54 Gy / 30 Fx	11 [29.7%]
59.4 Gy / 33 Fx	10 [27.0%]
60 Gy / 30 Fx	8 [21.6%]
50.4 Gy / 28 Fx	7 [18.9%]
70 Gy / 35 Fx [#]	1 [2.7%]
Mean dose Gy [95% CI]:	
Brain	16.0 [12.2 – 19.8]
Temporal Lobe	
Left	19.7 [12.8 – 26.6]
Right	16.6 [11.0 – 22.2]
Hippocampus	
Left	23.5 [16.5 – 30.3]
Right	21.4 [15.1 – 27.7]
D_2: Gy [95% CI]	
Brain	1.1 [0.6 – 1.7]
Temporal Lobe	
Left	10.5 [4.3 – 16.7]
Right	6.5 [3.5 – 9.5]
Hippocampus	
Left	15.3 [8.3 – 22.2]
Right	14.5 [8.0 – 21.0]
D_{98}: Gy [95% CI]	
Brain	52.8 [48.7 – 56.9]
Temporal Lobe	
Left	33.7 [26.1 – 41.3]
Right	30.3 [23.6 – 36.9]
Hippocampus	
Left	34.6 [27.2 – 41.9]
Right	31.6 [24.9 – 38.3]

[#] Prescription dose to low grade chondrosarcoma.

Neurocognitive Test	Brief Description	References
Hopkins Verbal Learning Test-Revised	• Validated within Alzheimer's disease and amnestic disorder patients as a measure of verbal learning and memory	• Benedict RHB, Schretlen D, Groninger L et al. Hopkins Verbal Learning Test – Revised: Normative Data and Analysis of Inter-Form and Test-Retest Reliability. The Clinical Neuropsychologuist 1998; 12(1). • Hopkins Verbal Learning Test-Revised | HVLT-R. Retrieved from https://www.parinc.com/Products/Pkey/130
Delis-Kaplan Executive Functioning System	• Assess key components of executive functions mediated by frontal lobe.	- Delis DC, Kramer JH, Kaplan E et al. Reliability and validity of the Delis-Kaplan Executive Function System: An update. Journal of the International Neuropsychological Society 2004; 10(2). - Homack S, Lee D, Riccio CA. Test review: Delis Kaplan executive function system. J Clin Exp Neuropsychol 2005; 27(5)
Brief Visuospatial Memory Test	• Measure of visuospatial memory	• Benedict, R. H. B., Schretlen, D., Groninger, L., Dobraski, M., & Shpritz, B. (1996). Revision of the Brief Visuospatial Memory Test: Studies of normal performance, reliability, and validity. Psychological Assessment, 8(2), 145-153. • Brief Visuospatial Memory Test–Revised | BVMT-R. Retrieved from https://www.parinc.com/Products/Pkey/30

Neurocognitive Test	Brief Description	References
Wisconsin Cart Sorting Test	• Test of cognitive reasoning • Can be used to assess damage to prefronal cortex	• Anderson S, Damasia H, Jones RD et al. Wiconsin card test performance as a measure of frontal lobe damage. J Clin Exp Neuropsychol 1991; 13(6) • Chelune GJ, Baer RA. Developmental norms for the Wisconsin card soring test. J Clin Exp Neuropsychol 1986; 8(3)
Boston Naming Test	• Test of visual confrontation naming for aphasia and dementia	• Borod JC, Goodglass H, Kaplan E et al. Normative data on the boston diagnostic aphasia examination, parietal lobe batter, and the boston naming test
Wechsler Memory Scale	• Assess memory functioning	• Prigatano DP. Wechsler memory scale: A selective review of the literature. Journal of Clinical Psychology 1978.

Supplementary Table 2. Neurocognitive Tests. Brief descriptions and additional references for each of the neurocognitive tests used in this study.

T-scores

Patient X	
	Index 1
	Index 2
	….
	Index 12
	Index 13

Assign a Deficit Score

Deficit Score	Criteria	Status
0	>= 40	normal
1	[35, 39]	mild
2	[30, 34]	mild-to-moderate
3	[25 29]	moderate
4	[20 24]	moderate-to-severe
5	<= 19	severe

Deficit Scores

Score1
Score 2
….
Score 12
Score 13

Average

Per-Patient GDS

Supplemental Figure 1. Calculation of global deficit score (GDS). First, individual T-scores were assigned a deficit score: 0 if greater than or equal to 40 (normal), 1 if between 35 and 39 (mild), 2 if between 30 and 34 (mild-to-moderate), 3 if between 25 and 29 (moderate), 4 if between 20 and 24 (moderate-to-severe), and 5 if less than or equal to 19 (severe). Per-patient GDS was then calculated as the mean of the deficit scores for that patient.

Supplemental Figure 2. Statistically significant associations. Per-patient GDS values are plotted against size of PTV (p = 0.048), tumor type (p = 0.043), use of antiepileptic drugs (p = 0.0088), and seizures (p = 0.0069).