

Treatment

Target volumes were delineated slice - by - slice on CT images for treatment planning using an individualized delineation protocol. The prescribed dose was 68–70 Gy, 60–70 Gy, 60–64 Gy, and 54–58 Gy for the planning target volumes (PTVs) derived from the gross tumor volume (GTVnx), GTV of involved lymph nodes (GTVnd), high - risk clinical target volume (CTV1), and low - risk clinical target volume (CTV2), respectively. Each patient was treated once daily for 5 days per week, with a total of 30–33 fractions. To calculate the dose-volume statistics for the bilateral frontal, temporal, and occipital lobe, the anatomic boundaries of these regions were manually delineated on axial CT images with T1-weighted images as anatomical reference after treatment planning.

In addition, during the study, according to the institutional guidelines, treatment regimens that RT only for stage I of NPC and concurrent chemoradiotherapy with or without neoadjuvant/adjuvant chemotherapy for stages II to IVB of NPC were recommended. Of the 104 patients, two (1.92%) underwent only RT, 53 (50.96%) were administered concurrent chemoradiotherapy, and 49 patients (47.12%) received a combination of neoadjuvant and concurrent chemoradiotherapy. Neoadjuvant therapy consisted of cisplatin with 5-fluorouracil (PF), cisplatin with docetaxel (TP), or docetaxel, cisplatin, and 5-fluorouracil and (TPF) every three weeks for ≥ 2 cycles. The concurrent chemotherapy consisted of cisplatin/nedaplatin or paclitaxel administered weekly for at least 4–7 cycles or in weeks 1, 4, and 7 of radiation therapy.

Table S1 Cortical morphology with significant group \times time interaction in the first model showed time (post-RT) dependent alterations in NPC patients (IMRT only) during the first year post RT, corrected for total intracranial volume (TIV), age, education, and gender in patients with nasopharyngeal carcinoma

Brain region	Coefficient	P
CV_STG.L	-70.04	2.50E-11*
CV_STG.R	-66.9	2.60E-11*
CV_MTG.L	-72.7	5.68E-10*
CV_MTG.R	-78.3	1.85E-9*
CV_TPL	-26.8	7.07E-13*
CV_TPR	-34.3	2.22E-16*
CV_PHG.L	-14.1	2.48E-08*
CV_PHG.R	-14.3	9.65E-08*
CV_ITG.R	-95.5	7.09E-13*
CV_TTG.R	-9.01	1.61E-11*
CV_FG.L	-56.8	1.57E-08*
CV_FG.R	-62.1	4.91E-10*
CV_LOG.R	-102.4	2.81E-07*
CV_LOFG.R	-58	1.15E-06*
CT_TPL	-0.02	6.20E-05*
CT_TPR	-0.02	2.88E-05*
CT_STG.L	-0.01	7.87E-12*
CT_RMFG.L	0.01	5.65E-07*
CSA_TTG.L	-3.72	4.57E-12*
CSA_ITG.R	-11.3	2.00E-10*
CSA_LG.R	-19.4	5.81E-11*
CSA_PHG.R	-2.35	3.21E-07*

*Statistically significant effects ($P < 0.05$). CV, cortical volume; CT, cortical thickness; CSA, cortical surface area; STG, superior temporal gyrus; MTG, middle temporal gyrus; TP, temporal pole; PHG, parahippocampal gyrus; ITG, inferior temporal gyrus; FG, fusiform gyrus; LOG, lateral occipital gyrus; LOFG, lateral orbitofrontal gyrus; RMFG, rostral middle frontal gyrus; TTG, transverse temporal gyrus; LG, lingual gyrus; L, left; R, right.