

Supplement Table 1 – Definition of ‘Major’ and ‘Minor’ changes

Major change	Minor Change
The GTV was edited by $\geq 10\text{mm}$	Editing a volume by a small amount, e.g $< 10\text{mm}$ on $< 2$ contiguous slices
Any change needed to avoid a geographic miss of the GTV	Excluding an uninvolved muscle from CTV
Suspicious nodes were included within the high-dose/radical CTV	
Excluding/including a whole nodal level in a CTV	
Geographic miss defined at study outset:	
Editing of GTV by $\geq 10\text{mm}$ in any direction	
Adding to GTV on 2 or more consecutive slices.	

The classification of the significance of target volume changes following radiologist review.

Supplemental Table 2 Patient and disease characteristics

Patient or disease characteristic	N (%)
Age (years)	59 (absolute range 29-83)
Sex	F 14(28); M 36(72)
Primary subsite	
Oropharynx	36 (72)
Paranasal Sinus	3 (6)
Nasopharynx	5 (10)
Hypopharynx	2 (4)
Larynx	2 (4)
Oral cavity	2 (4)
Histology	
Squamous cell carcinoma	44 (88)
Adenoid cystic	2 (4)
Nasopharyngeal ca (Lymphoepithelial/undifferentiated)	4 (8)
Tumour stage (TNM7)	
I	14 (28)
II	10 (20)
III	7 (14)
IV	18 (36)
Unstaged <sup>□</sup>	1 (2)
Nodal stage (TNM8)	
0	8 (16)
1	8 (16)
2a	7 (14)
2b	9 (18)
2c	12 (24)
3	5 (10)
Unstaged <sup>□</sup>	1 (2)
Disease stage (AJCC)	
I	1 (2)
II	0
III	13 (26)
IV	35 (70)
Unstaged <sup>□</sup>	1 (2)
Co-registered MRI imaging	
RT planning	5 (10)
Diagnostic	45 (90)
Radiotherapy intent	

	Primary radical	37 (74)
	Post-op	11 (22)
	High-dose palliative	2 (4)
Radiotherapy radical PTV dose prescription		
	65Gy/30#	33 (66)
	60Gy/30#	11 (22)
	55Gy/20# <sup>‡</sup>	2 (4)
	50Gy/20# <sup>¶</sup>	4 (8)

Abbreviations: F = female, Gy = Gray, M = male, # = fractions

<sup>Ω</sup> Unstaged case of local recurrence

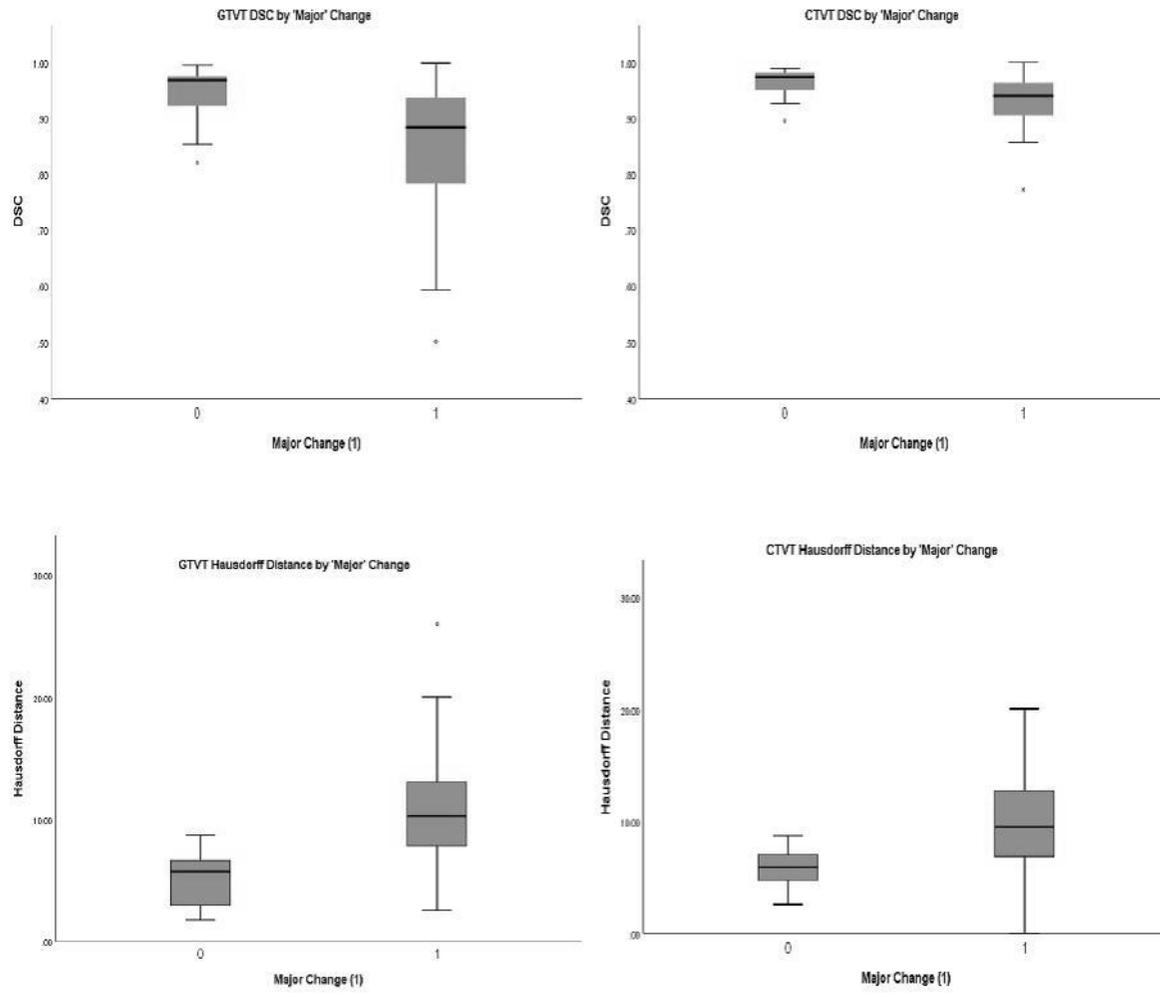
<sup>‡</sup> Two patients treated with palliative intent received radical dose of 55Gy in 20 fractions.

<sup>¶</sup> Four patients treated with radical intent 50Gy in 20 fractions; deviation from standard institutional dose-fractionation due to trial participation (n=1) and treatment hypofractionation during COVID-19

Supplement Table 3 Volume comparison metrics GTV and CTVT

	GTVT (IQR)		CTVT (IQR)		GTVN (IQR)		CTVN (IQR)	
	Onc	Rad	Onc	Rad	Onc	Rad	Onc	Rad
<b>Median volume (cm<sup>3</sup>)</b>	12.6 (6-22.5)	12.1 (7.2-23.2)	68.8 (46.2-124)	66.8 (52.7-139)	34.7 (20.5 – 65.8)	34.7 (20.3-69.2)	174.9 (133.9-275.9)	181.3 (127.8 – 301.6)
<b>Statistical difference between volume size</b>	p=0.034		p=0.003		p=0.14		p=0.17	
<b>Median volume change (cm<sup>3</sup>)</b>	0.4 (-0.1 – 2.4)		2 (0.2-7.6)		1.3(-1.4-4.4)		8.4 (-3.9 - 28)	
<b>Median Percentage volume change (%)</b>	5.7 (-0.5 – 14.1)		2.7 (0.3 – 11.9)		4.5 (-8.25 - 7.6)		4.5 (-5.2 - 12.6)	
<b>Median DSC</b>	0.933 (0.82-0.96)		0.95 (0.90-0.97)		0.95 (0.91-0.97)		0.91 (0.88-0.96)	
<b>Median JI</b>	0.87 (0.7-0.94)		0.90 (0.82-0.95)		0.91 (0.83-0.95)		0.83 (0.79-0.94)	
<b>Median HD (mm)</b>	7.45 (5.45-11.98)		8.05 (6.34-11.76)		20.7 (12.2-41.6)		13.1 (10.2-36)	

Supplement Figure 1. Boxplots of DSC and HD (mm) for GTVT and CTVT by 'Major'



Box plots of metrics of DSC and HD for GTVT and resulting CTVT separated by 'major' change (1) classification.