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Article:

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<https://doi.org/10.1016/j.clon.2019.03.001>

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Table 1 – Details of peer reviewed cases by tumour site and stage (according to the American Joint Committee on Cancer TNM staging 7th edition)

Site	Stage					Total
	I	II	III	IVa	IVb	
Oral Cavity	4	7	8	40	2	61
Oropharynx	2	5	20	100	1	128
Larynx	1	4	12	25	0	42
Hypopharynx	2	1	1	8	2	14
Paranasal Sinus	0	0	0	13	1	14
Salivary glands	0	5	4	3	0	12
Unknown Primary	0	0	5	19	3	27
Nasopharynx	0	2	2	5	0	9
Total	9	24	52	213	9	307

Table 2 – Rates of recommended changes per tumour site and by treatment intent (definitive/adjvant)

	Total Cases	Total changes (% of total cases)	Major Changes (% of total cases)	Minor Change (% of total cases)
Oral Cavity	61	12 (19.6)	5 (8.2)	7 (11.4)
Oropharynx	128	12(9.4)	9 (7.0)	3 (2.3)
Larynx	42	10 (23.8)	8 (19.0)	2 (4.8)
Hypopharynx	14	1 (7.1)	0 (0)	1 (7.1)
Paranasal Sinus	14	1 (7.1)	1 (7.1)	0 (0)
Salivary glands	12	1 (8.3)	1 (8.3)	0 (0)
Unknown Primary	27	5 (18.5)	3 (11.1)	3 (7.4)
Nasopharynx	9	0 (0)	0 (0)	0 (0)
Definitive (C)RT	195	20 (10.3)	16 (8.2)	4 (2.1)
Adjuvant (C)RT	112	23 (20.5)	11 (9.8)	12 (10.7)
Total	307	43 (14.0)	27 (8.8)	16 (5.2)

Table 3– Summary of types of recommended changes (n=43)

Recommended Changes	No of cases (%)
Contour changes:	
Definitive radiotherapy (n=195)	
GTV	4 (2.1)
Primary tumour high dose CTV increased	6 (3.1)
Primary tumour high dose CTV decreased	2 (2.1)
Addition of suspicious node in high dose nodal CTV	6 (3.1)
Addition of elective nodal group in radical plans	5 (2.6)
Removal of elective nodal group in radical plans	1 (0.5)
Contour changes:	
Adjuvant radiotherapy (n=112)	
Primary tumour high dose CTV increased	5 (11.6)
Primary tumour high dose CTV decreased	1 (2.3)
Increase in high dose nodal CTV in adjuvant plans	7 (6.3)
Other changes:	
Change in dose fractionation	1 (2.3)
Addition of bolus	1 (2.3)
No information available	4 (9.3)

Table 4 – Univariable logistic regression for potential predictors of change
(statistically significant p values in bold)

Predictor	Level	Odds ratio	Odds ratio 95% confidence interval	p value
Site	Oropharynx	1		
	Oral cavity	2.37	1.0-5.63	0.051
	Larynx	3.02	1.2-7.63	0.02
	Hypopharynx	0.74	0.09-6.19	0.78
	Nasopharynx	0	0-	1
	Paranasal sinus	0.74	0.09-6.19	0.78
	Salivary glands	1.93	0.38-9.87	0.44
	Unknown primary	2.20	0.7-6.86	0.18
	Stage	I	1	
II		0.5	0.69-3.63	0.49
III		0.46	0.76-2.73	0.39
Iva		0.55	0.11-2.79	0.47
IVb		1.40	0.14-13.57	0.77
Intent	Adjuvant v. Definitive	2.26	1.18-4.34	0.014
T-stage	T1	0.70	0.18-2.67	0.60
	T2	0.63	0.20-2.00	0.42
	T3	0.84	0.26-2.70	0.77
	T4	0.77	0.24-2.44	0.65
N-Stage	N1	1.06	0.39-2.90	0.90
	N2	0.71	0.34-1.50	0.38
	N3	2.66	0.44-16.02	0.29

Table 5: Summary of selected series reporting head and neck cancer radiotherapy peer review

Location/reference	Size of series	Cases reviewed	Method of peer review	Main Issues peer reviewed	Changes recommended by peer review	Duration
Current series, UK	n=307	All radical/adjvant (82% of caseload reviewed)	Weekly meeting	Target volumes	8.8% major 5.2% minor	1 hour per week, mean 6 cases per meeting
Peter MacCullum Cancer Centre, Australia [14]	n=548	All radical/adjvant (92% of caseload reviewed)	Review by second radiation oncologist	Target volumes	14.8% major (implemented) 21% minor (implemented)	Median time per case within 11-20minutes timeframe
Queen Elizabeth Hospital, Birmingham, UK (initial experience) [15]	n=62	Radical/adjvant, selected by treating clinician (65% of caseload reviewed)	Review by second radiation oncologist	Target volumes	Significant change 13% Minor change 26%	Median time per case 17 minutes
Queen Elizabeth Hospital, Birmingham, UK (initial experience) [17]	n=110	Radical/adjvant, selected by treating clinician (89% of caseload reviewed)	Review by second radiation oncologist	Target volumes	Significant change 2% Minor change 20%	Not reported
University of California, USA (Braunstein et al.) [30]	n=80	All radical/adjvant	Weekly meeting with radiation oncology and neuroradiology	Target volumes	55% changes GTV changes in 26/80 CTV changes in 25/80	Not reported
Tom Baker Cancer Centre, Calgary, Canada [31]	n=73 (extracted from mixed tumour site report)	All radical/adjvant	Weekly meeting	Target volumes and plans	0% post-contouring changes 1.5% post-planning changes	Not reported
Multicentre: Torbay Hospital, Royal Devon and Exeter Hospital, Musgrove Park Hospital, Taunton, UK [32]	n=129	All cases including palliative	Weekly virtual meeting	Target volumes	Significant change 3% Minor change 9%	Not reported
Non-Texas based campuses affiliated with MD Anderson Cancer Centre, USA [18]	n=442 (extracted from mixed tumour site report)	All radical/adjvant	Weekly virtual meeting	Target volumes and plan	34%	Not reported