

Supplementary material for Hafeez S, et al. Normal tissue sparing with respiratory adapted volumetric modulated arc therapy for distal oesophageal and gastro-oesophageal tumours. Acta Oncologica 2013; doi: 10.3109/0284186X.2013.776174

Supplementary Table I. Patient and tumour characteristics.

Patient	Sex	Age	Location of primary tumour	Tumour length (cm)	Stage*		Histology
					TNM	AJCC	
1	M	79	GOJ	5	T2N0M0	IIA	Adenocarcinoma
2	M	78	GOJ	6	T3N1M0	IIIA	Adenocarcinoma
3	M	80	GOJ	4	T3N1M0	IIIA	Adenocarcinoma
4	M	67	GOJ	4	T3N1M0	IIIA	Adenocarcinoma
5	M	67	GOJ	4	T3N1M0	IIIA	Adenocarcinoma
6	F	70	Lower 1/3 Oesophagus	5	T4N0M0	IIIC	Squamous cell carcinoma
7	M	81	GOJ	7	T3N1M0	IIIA	Adenocarcinoma
8	M	85	Lower 1/3 Oesophagus	4	T2N0M0	IIA	Adenocarcinoma
9	M	45	GOJ	10	T3N1M0	IIIA	Adenocarcinoma

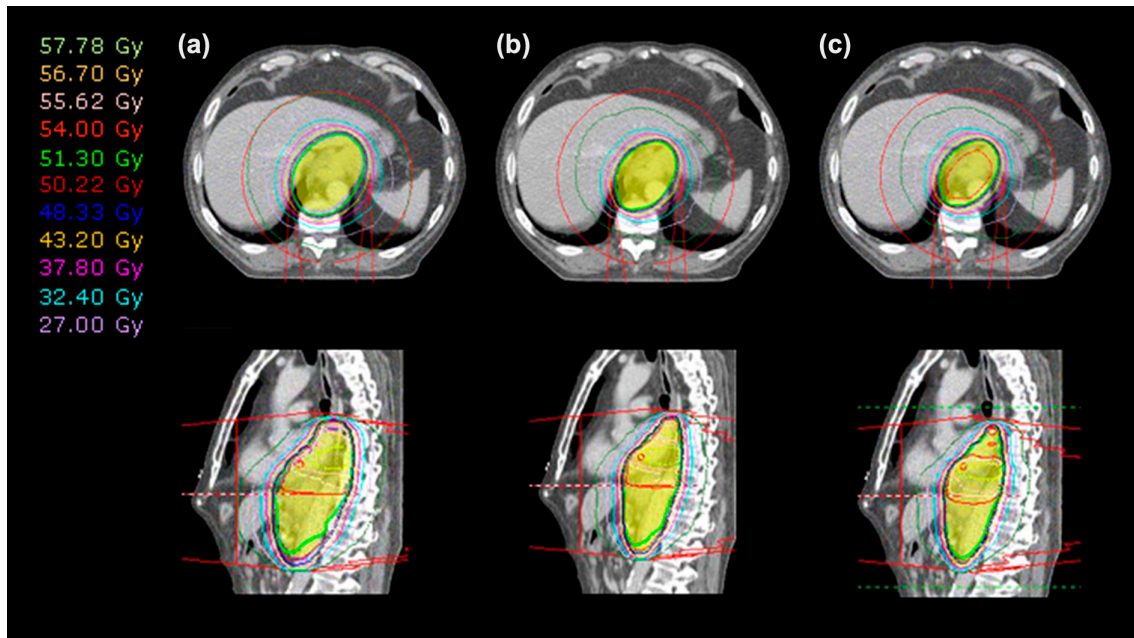
*TNM staging AJCC 2009

Supplementary Table II. Summary of GTV centroid motion with respiration.

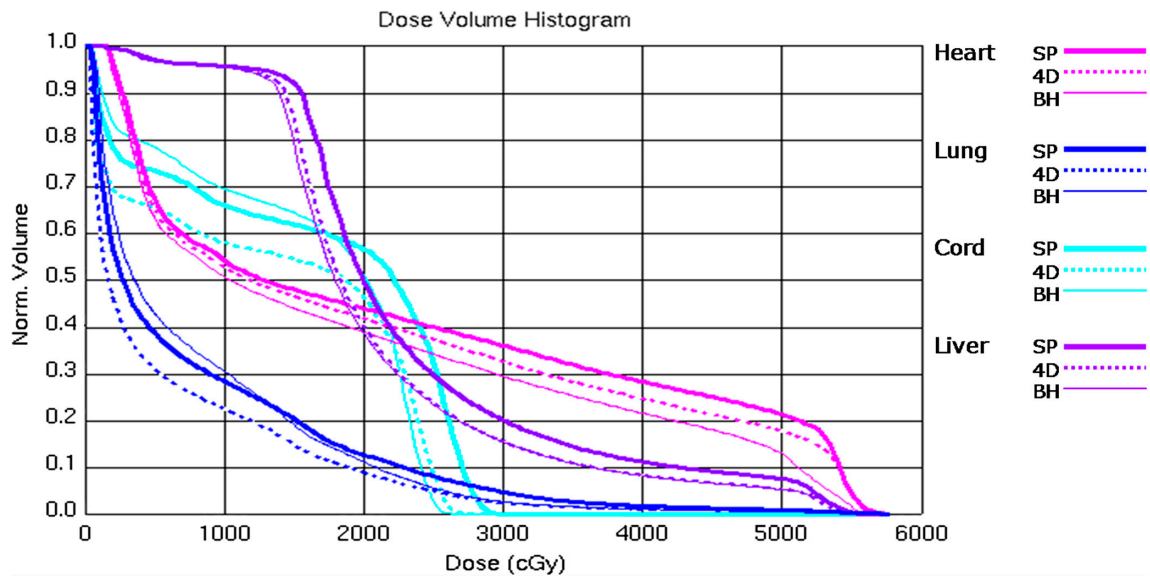
Direction of displacement	Mean (cm) (range)
Overall lateral	0.67 (0–3.55)
Right	0.81 (0–3.55)
Left	0.21 (0.20–0.21)
Overall anterior-posterior	0.60 (0–1.24)
Anterior	0.20 (0–0.43)
Posterior	0.71 (0.08–1.24)
Overall superior-inferior	1.02 (0–3.07)
Superior	1.24 (0.29–3.07)
Inferior	0.26 (0–0.51)

Supplementary Table III. DVH OARS summary.

	Standard plan mean (range)	4D plan mean (range)	BH plan mean (range)	Significance level		
				p-value Standard plan with 4D plan	p-value Standard plan with BH plan	p-value 4D plan with BH plan
Lung V5 (%)	67.8 (39.0–86.2)	61.0 (23.5–84.1)	66.0 (21.9–85.0)	0.028	0.515	0.314
Lung V20 (%)	15.6 (8.3–30.9)	10.0 (4.8–17.3)	9.5 (4.2–18.7)	0.018	0.012	0.050
Heart V30 (%)	28.6 (38.5–19)	22.9 (7.5–31.0)	21.4 (7.5–30)	0.008	0.007	0.042
Heart V40 (%)	19.7 (10.0–30.0)	14.6 (5.0–22.5)	14.5 (3.0–22.5)	0.007	0.007	0.461
Mean heart dose (Gy)	24.3 (17.9–30.0)	21.5 (16.5–26.8)	21.1 (16.2–26.3)	0.008	0.008	0.024
Liver V30 (%)	8.2 (0–19.9)	6.8 (0–15.3)	6.07 (0–14.2)	0.017	0.012	0.012
Maximum cord dose (Gy)	35.4 (28.4–43.1)	30.3 (21.9–45.8)	29.2 (23.0–43.1)	0.011	0.008	0.021



Supplementary Figure 1. Example of (a) standard plan (SP), (b) 4D plan and (c) BH plan with axial isodoses top and sagittal isodoses below (PTV yellow).



Supplementary Figure 2. Example DVH.