therefore, makes segmentation of different heart structures feasible in the clinic.

OC-0260
Quantifying axillary radiotherapy in early breast cancer as part of the POSNOC trial

D. Megias[1], E. Parsons[1], D.J. Dodwell[2], A. Goyal[3]
[1]Mount Vernon Cancer Centre, Radiotherapy Physics, Middlesex, United Kingdom
[2]St James Hospital, Oncology, Leeds, United Kingdom
[3]Royal Derby Hospital, Surgery, Derby, United Kingdom

Purpose/Objective: There is an increasing tendency to consider axillary radiotherapy (AR) in preference to axillary node clearance (ANC) in early breast cancer following the recent results of the AMAROS trial which demonstrated equivalent local control but reduced arm lymphoedema after AR. Consequently AR is permissible within the POSNOC trial (evaluating the role of axillary treatment in women with early stage breast cancer and one or two sentinel node macrometastases).
We set out to quantify axillary radiotherapy in terms of field placement and dose in UK radiotherapy centres participating in POSNOC.
Materials and Methods: Data was collected from dummy run cases submitted as part of the POSNOC radiotherapy quality assurance programme and reviewed using radiotherapy plan visualisation software (VODCA). Anatomical points relative to the axillary nodal boundaries identified by RTOG (Radiation Therapy Oncology Group) within the Breast Cancer Atlas for Radiation Therapy Planning were defined to evaluate axillary field placement and dose to the axillary nodes at depth.
• Field placement was assessed measuring the 50% isodose relative to the superior (cricoid cartilage), lateral (medial border of latissimus dorsi) and medial (trachea-midpoint cranial of the base of clavicle caudal of thyroid) extent of the axillary nodal boundaries.
• Dose to the axillary nodal levels at depth was assessed by measuring a point dose at the posterior aspect of the midpoint of the cranial-caudal and lateral-medial extent of each nodal level boundary.
Results: Figure 1:

		Field placement				
		Superior border	Lateral border	Medial border	Location of match junction (relative to cranial or caudal border of the clavicle head)	
					Cranial	Caudal
Field based (15)	Mean (cm)	1.6 (superior)	1.9 (lateral)	-0.7 (lateral)	0	18
	Range (cm)	0-3.5	0-5	-2.3 to +1.3		
Volume based (3)	Mean (cm)	1.4 (superior)	2.1 (lateral)	0.2 (medial)	0	18
	Range (cm)	0.9-1.8	0.6-3.19	-0.7-0.7		
		Dose received at depth (% prescribed dose)				
		Level 1	Level 2	Level 3	SCF	
Prescribed @ dmax with 6mv (5)	Mean (%)	82.3	85.5	87.3	97.5	
	Range (%)	72.5-92.5	80.7-92	82.9-94.7	89.6-104.8	
Ant/post (8)	Mean (%)	87.6	93.7	92.3	96.8	
	Range (%)	74.4-100.7	83.0-102.5	82.5-102.6	90.9-103.4	
Prescribed at depth or 10mv@ dmax (5)	Mean (%)	84.0	92.5	95.7	102.1	
	Range (%)	76.3-97.1	87.3-96.2	92-100.6	100.5-105.5	

Conclusions: The results suggest that treatment fields encompass the axillary nodal boundaries in the superior and lateral dimensions irrespective of planning approach. However, there is a potential compromise regarding the coverage of the medial nodal boundary, with some cases not encompassing the complete medial extent proximal to the trachea. Comparing volume with field based techniques suggests that coverage of the medial supraclavicular nodes is optimised when adopting a volumetric planning approach. The POSNOC radiotherapy guidelines recommend that ≥ 80% of the prescribed dose is achieved at mid-axilla and that the dose to the supraclavicular fossa nodes should be >90% of the prescribed dose. The point dose results suggest that each

method of prescribing and/or beam arrangement for axillary nodal radiotherapy can achieve these dose levels, but in some cases level 1 nodes received less than 75% of the prescribed dose. The evaluation of anatomical reference points represents a simple method for evaluating axillary nodal coverage for centres not using a volumetric planning approach.

OC-0261
Does chin fixation improve the setup accuracy of the patients receiving locoregional treatment for breast cancer?

K. Goudschaal[1], M. Kamphuis[1], N. Bijker[1], M. Frank[1], A. Bel[1], N. Van Wieringen[1]
[1]Academic Medical Center, Radiotherapie, Amsterdam, The Netherlands

Purpose/Objective: In our clinic breast cancer patients who receive locoregional treatment are positioned on a CQual breastboard (CIVCO, USA). This set-up leaves room for inaccuracies, especially in the area of the cervical vertebrae. The aim of this study is to determine whether fixation of the chin improves the stability of the supraclavicular lymph node area.
Materials and Methods:

Figure 1: chin fixation

In April 2014 chin fixation was introduced in our department for patients that receive locoregional radiotherapy for breast cancer. This chin fixation is made using posicast thermoplastic mask material (Macromedics, the Netherlands) and is attached to the breastboard (figure 1).
To evaluate the potential benefit of chin fixation, a comparison was made between two groups of patients positioned without/with chin fixation. The two groups contained the last 13 patients before introducing chin fixation and the first 13 patients with chin fixation. The group without chin fixation was given verbal instruction by RTTs to turn the chin 45 degrees to the contralateral side. For both patient groups IGRT is performed on daily basis or once a week, dependent of the IGRTprotocol, using Cone-Beam CT (CBCT) imaging.
Clinically the correction of the patient set-up was based on registration of the chest wall/sternum using a bone match algorithm in XVI. 80 CBCTs per group with an average of 6 CBCTs per patient were used for this study. The number of CBCTs ranged between 3 and 11 per patient.
The stability of the supraclavicular lymph node area is defined as the change of position with respect to the chest