wall/sternum. It is determined by calculating the difference between registration results of the two areas, both for translations and rotations. For registration of the supraclavicular lymph node area the trachea was used as a surrogate. Registration of this area was performed using a grey-value algorithm.

The systematic and random error and group mean of the lymph node position was calculated for both groups. T-test was performed to determine significant difference between the mean of both groups.

Results:

Skin toxicity was assessed weekly using the RTOG scale. Differences in grade I toxicity SIB vs sequential were not statistically significant: p=0.41; and differences in grade II/III, neither were statistically significant: p=0.27

Results are presented in table 1. This study shows no significant differences between the setup accuracy of both groups. The systematic translation error in the cranial-caudal translation is the largest for both patient groups. The systematic error of the left-right, cranial-caudal and anterior-posterior rotations didn’t show a significantly smaller rotational error in the supra clavicular area for the group with the chin fixation.

Conclusions: The addition of chin fixation doesn’t improve the stability of the supraclavicular lymph node area, nor does it prevent great deviations in individual patient setup. Limitations of the current study could be the small sample size, the learning curve in the fabrication of the chin fixation and its use.

OC-0262

Simultaneous integrated boost in external radiotherapy for breast cancer. Skin toxicity

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Purpose/Objective: External radiotherapy after surgery is considered standard for breast conserving treatment. In some patients, boost over the breast region at risk for local recurrences can be administered sequentially or concomitantly (simultaneous integrated boost: SIB) with whole breast irradiation. This SIB technique reduces the total time of treatment and sometimes determines best dose homogeneity. Acute cutaneous toxicity is due to the cumulative dose and dose per fraction administered, so it can be thought that SIB increases this side-effect. Our objective was to evaluate acute skin toxicity in radiotherapy breast cancer and differences between concomitant and sequential boost.

Materials and Methods: We analyzed 160 patients with breast conserving treatment, aged from 33 to 80 years. Radiation treatment was delivered with Linear Accelerator and 3D-planning. Planning Target Volumes and doses were: PTV1: 50Gy whole breast + PTV2 (boost): 10-14Gy with two different techniques: sequential or concomitant (SIB).

Skin toxicity was assessed weekly using the RTOG scale.

Results: Radiation boost: SIB was applied in 65 patients (40.3%); Sequential boost in 95 patients (59.75%). Skin Toxicity: Global Grade I radiodermitis was evaluated in 86 patients (54.1%); Grade II in 72 patients (45.3%); Grade III only in 1 patient (0.61%)

According to the boost technique: (fig.1)

-SIB: Gr I, 38 pts (58.4% of this group); Gr II, 27 pts (41.5%). No grade III toxicity was assessed.

-Sequential boost: Gr I, 48pts (50.5% of this group); Gr II/III, 47 pts (49.4%). Differences in grade I toxicity SIB vs sequential were not statistically significant: p=0.41; and differences in grade II/III, neither were statistically significant: p=0.27

Table 1. Results of translations and rotations with and without chin fixation

<table>
<thead>
<tr>
<th></th>
<th>With chin fixation</th>
<th>Without chin fixation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (mm)</td>
<td>Mean (mm)</td>
</tr>
<tr>
<td></td>
<td>Anterio-Poster</td>
<td>Anterio-Poster</td>
</tr>
<tr>
<td>Left-Right</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Cranial-Caudal</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Median error</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Random error</td>
<td>0.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Fig.1. RTOG toxicity and boost technique

Conclusions: In our Institution, acute skin toxicity in external radiotherapy with boost for breast cancer is mild, with less than 1% of grade III complications. There are a greater number of patients with grade I and grade II/III in sequential boost vs SIB, but these differences were not statistically significant so we can conclude that Simultaneous Integrated Boost does not increase acute cutaneous toxicity, and reduces the overall duration of treatment. One more in-depth analysis of the data and other parameters (irradiated volume, dosimetry,...) could confirm this results or establish differences in toxicity between these two techniques.

OC-0263

Accuracy of boost volume tracking in whole breast irradiation using conebeam CT imaging of surgical clips

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Purpose/Objective: Most local recurrences occur in or near the tumor bed after breast-conserving therapy (lumpectomy followed by whole breast irradiation (WBRT)). Tracking the boost volume instead of the thoracic wall using implanted surgical clips might reduce RT planning margins. In this study, the accuracy of surgical clip matching on conebeam CT (CBCT) and the relative motion of the clip area relative to the thoracic wall was investigated.

Materials and Methods: The accuracy of the clip matching was studied by determination of the interobserver variation using the standard deviation of the X, Y and Z-direction in all matches. In a group of 20 breast cancer patients, 5 to 8 CBCTs were acquired (128 scans in total). During surgery 2 to 5 clips were implanted with a median of 4 clips per patient. Each CBCT was registered by 3 or 4 Radiation Therapy Technicians (RTTs) to the planning CT in XVI software (Elekta AB) resulting in 484 independent registrations (on average 3.8 per scan). For registration, a clipbox encompassing the clips area was defined. Next, the automatic seed match option