modified PTVs were overlaid and compared on each of the diagnostic, planning and verification scans, and coverage of tumour classified as well covered, borderline or not covered. Our second approach involved forming an ITV as a composite volume of the uterus on the bladder full and bladder empty scans. Isotropic expansions of 7, 10, 12 and 15mm were then applied to determine if a composite PTV would consistently encompass the target on CBCT images.

**Results:** A total of 40 CBCT images were reviewed for 11 patients. The unmodified PTV did not fully cover the target in 16/40 scans (40%) and on at least one scan in 6/11 patients (55%). Modified PTV’s provided full coverage on every scan but one (98% coverage) in which the bladder volume was overfilled (200% volume) compared to the planning scan. Isotropic expansions of 10mm and 12mm to the ITV provided adequate coverage on 37/40 and 39/40 CBCT’s respectively. The composite PTV offered reduced or comparable treated volumes to the manually modified PTV.

**Conclusions:** A standard CTV-PTV margin does not ensure adequate target coverage. It is important to use bladder status to predict uterine motion but an additional margin is also required due to the impact of rectal filling and tumour regression. We recommend forming a composite CTV from ‘bladder empty’ and ‘bladder full’ imaging with a 10 or 12mm PTV expansion to ensure an optimal balance between adequate coverage and minimisation of normal tissue toxicity.

**OC-0167**

Is radiographer led localisation for patients with metastatic spinal cord compression a feasible option? C. Lacev, C. Ockwell, I. Locke, K. Thomas, J. Hendry, H. McNair

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Purpose/Objective: To compare treatment fields localised between radiographers and clinicians, to investigate if there is parity between them. Critically analyse geographical variations that exist and assess the subsequent feasibility and impact of a radiographer led service.

Materials and Methods: 23 patients with metastatic spinal cord compression (MSCC) were prospectively sampled and once a field to treat the patient had been approved by a clinician, the CT data set was anonymised. 4 different radiographers not involved in the original planning performed a localisation for each patient. This gave a total of 92 localisations to be compared to the clinicians approved fields. Agreement between a radiographer and clinician was defined as ≤0.5cm between field length, width and 3 isocentre coordinates. If any one of the five parameters was greater than this tolerance, the localisation was not in agreement. The primary end point in this study was to investigate whether agreement between radiographer and clinician was achieved in minimum of 97% of the localisations. A secondary end point was to assess the patient pathway efficiency and the potential time that could be saved with a radiographer led approach.

Results: 90/92 localisations showed parity therefore the rate of agreement between radiographers and clinicians in the localisation of radiotherapy fields for MSCC was 97.8% under the 0.5cm tolerance defined. In all of the measurable parameters, the average differences were less than 0.2cm such that there was a statistically significant difference in the data from the 0.5cm median (p<0.0001) that would establish no agreement between clinician and radiographer. Therefore robust parity between the two groups was established. An average delay in waiting for a clinician to approve the original field was 54 minutes (median and range were 48 and 141 minutes respectively).

Conclusions: A very strong rate of agreement has been established along with minimal geographical or geometric differences in the localised fields. It has also been highlighted that considerable time could be saved in the patient’s pathway by removing the need to wait for clinician approval of the treatment field. By conducting this study, evidence has been collected that has enabled inferences to be drawn that a radiographer led service for the localisation of MSCC is a feasible option for improving the associated pathway and subsequent patient experience.

**OC-0168**

The impact of dose to the salivary apparatus on quality of life in patients treated with IMRT for head and neck cancer A. Durcan², M. Leech¹

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Purpose/Objective: This study examined the radiation doses delivered to salivary apparatus in patients receiving intensity modulated radiotherapy (IMRT) to the H&N over the past 7 years. It examined the efficacy of parotid sparing, the effects of radiation dose to the submandibular glands (SMGs), minor and sublingual salivary glands on the incidence and severity of subjective xerostomia and investigated the quality of life of surviving patients.

Materials and Methods: 7 years of retrospective dosimetric data were assessed based on the plans of surviving H&N cancer patients that were treated by IMRT. SMGs and a new surrogate contour representing the minor oral and sublingual tissue target (MOIST) were outlined. Doses received by the salivary apparatus were statistically analysed in conjunction with the EORTC QLQ-C30 and H&N35 module results which was completed by participants.

Results: Mean global QoL was 66.6 out of 100. Emotional functioning had the lowest scores amongst the functional scales and physical functioning ranked the highest. The results of the questionnaire were compared according to sex, age and staging. There were no significant differences in any of the scores of males and females who completed the EORTC QLQ-C30. Regarding age, a statistically significant difference in physical functioning score across four different age groups (<50 years: n = 4, 50–59 years: n = 10, 60–69 years: n = 20, >70 years: n = 7), p = .034 was identified. Significant differences in the physical functioning level, p = .024, fatigue symptoms, p = .006, and pain symptoms, p = .028 of patients with early stage disease and those with locally advanced disease were observed.

Patient global QoL scores were not significantly different to scores of a normal population after IMRT. Global QoL scores were not influenced by gender, stage or treatment modalities in conjunction with IMRT. Dry mouth was the most prevalent symptom. Dry mouth scores were not influenced by gender, stage or the addition of different treatment modalities such as chemotherapy or surgery. There was a moderate and statistically significant relationship between xerostomia score and global QoL, R = 0.428, N=39, p=0.01. Mean dose to the salivary apparatus was not correlated with subjective xerostomia. Mean dose to the salivary apparatus was shown to have an impact on severity of subjective xerostomia. Mean dose to the individual salivary glands was not correlated with global QoL scores.