ani muscle inserts into the rectal wall) were delineated. CBCTs were performed once a day during the first 5 fractions, then once or twice a week during all treatment, by Elekta X-Ray volume imaging system (XVI). All CBCTs were co-registrated with CT scan simulation and the IM was estimated for GTV. Bladder was also delineated. Co-registrations were performed on RayStation platform (RaySearch Laboratories, Stockolm, Sweden) by bone landmarks and corrected for set-up error. IM evaluation was obtained for both prone and supine position, as mean shift in left and right (L-R), postero-anterior (P-A) and cranio-caudal (Cr-C) directions and volumes variability were calculated by DICE index.

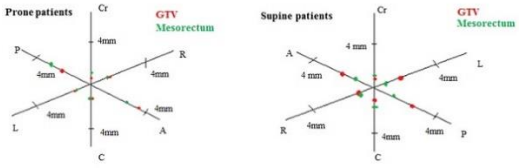
Results

A total of 296 CBCTs were performed and retrospectively analysed: 147 in prone and 149 in supine position. Mean shift in left and right (L-R), postero-anterior (P-A) and cranio-caudal (Cr-C) directions for GTV and mesorectum were shown in Figure 1. Mean DICE index for GTV, mesorectum and bladder was 0.74, 0.86, 0.65, respectively in prone position, and 0.78, 0.89, 0.69 respectively in supine position. Detailed values are reported in Table 1.

Table 1. Mean shift in left-right (L-R), postero-anterior (P-A) and cranio-caudal (Cr-C) directions, mean volumes and DICE index for GTV, mesorectum and bladder in prone and supine position.

147 CBCT (prone pts)	L-R (cm)		P-A (cm)		Cr-C (cm)		Volume (cm^3)	DICE index
GTV	-0.14	0.14	0.23	-0.35	0.10	-0.19	58.45	0.74
Mesorectum	-0.13	0.13	0.29	-0.26	0.19	-0.19	339.46	0.86
Bladder	-0.26	0.22	0.39	-0.52	0.60	-1.00	226	0.65
149 CBCT (supine pts)	**R-L (cm)**		**A-P (cm)**		**Cr-C (cm)**		**Volume (cm^3)**	**DICE index**
GTV	-0.10	**0.17**	**0.26**	-0.23	0.09	-0.10	39.67	0.78
Mesorectum	-0.10	0.09	0.15	-0.12	0.12	-0.16	361.78	0.89
Bladder	-0.15	0.19	0.62	-0.37	0.76	-0.45	236.73	0.69

Figure 1. Mean shift in left-right (L-R), postero-anterior (P-A) and cranio-caudal (Cr-C) directions for GTV (tumor site plus corresponded rectum) and mesorectum



Conclusion

In our study, GTV and mesorectum IM, evaluated in patients in prone and in supine position, were less than 4mm in all directions. Despite the small number of patients evaluated, we do not observe relevant variation in prone and supine position, even if, in the same deviations, supine position resulted in lesser movement compared to prone position. Our purpose is to increase our evaluation with more patients. Anyway, in both set-up, IM could be obtained with CBCTs and this could be an useful method for appropriate treatment intensification.

EP-1461 SBRT Pelvic re-irradiation: 2cm "rind" around PTV and small bowel dosimetry of rectal recurrences

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Purpose or Objective

Management of locally recurrent rectal cancer (LRRC) with re-irradiation is challenging. SBRT is an alternative but concerns around small bowel (SB) tolerance remain. We hypothesise the sharp dose gradient of SBRT means that only SB within 2cm of the PTV would be relevant.

Material and Methods

A prospective nationally maintained database for SBRT re-irradiation was interrogated. Eligibility criteria were pelvic recurrence in a previously irradiated colorectal cancer, not eligible for exenteration, >6 month disease free survival, >6 month from previous RT, ≤3 metastases, PS 0-1. SBRT dose of 30Gy in 5 fractions in <10 days was specified. Anatomical compartments of site recurrence were mapped using a published atlas. A 2cm 'rind' was added to the PTV and overlapping volume with small bowel was assessed. Clinician reported CTCAE and patient reported Visual Analogue Scale (VAS). Linear regression was used to assess predictive factors of SB $D_{0.5cc}$.

Results

28 patients with 33 separate pelvic lesions were treated between 10/15 and 06/18. 22 patients had lateral pelvic compartment recurrence. All completed the SBRT. The median age was 64 years (range: 36-84). 27/28 had received 45-50.4Gy in 25-28F with concurrent Capecitabine, 1/28 received 25Gy/5F, all followed by surgery. Including SBRT, the cumulated effective dose received was $>100Gy_{10}$. The median GTV volume was 14.9cc (range 0.47-121.73 cc). 23 lesions had overlap with SB. Median SB overlap volumes in the 2cm rind 12.5 cc (0-179.3). Dose to overlap volumes were median (max) D0.5cc =20.6 Gy (36Gy), D3cc=16.9Gy (33.6Gy), D5cc=17.1Gy (32.4Gy).

With a median FU of 10 months (range 5.4 – 23.4) local control at 1 year was 82.9% (C.I 66% -100%). No grade 3 toxicity was recorded. Median (range) VAS score before radiation was 75 (40-80) and 85 (45-90), a significant improvement (Wilcoxon signed rank, p=0.00861)

GTV volume and non-lateral location were significant predictors of increase overlap SB $D_{0.5cc}$ in a linear regression model (GTV p=0.0032, non-lateral, p=0.026; R^2 0.2872, p=0.0062).

Conclusion

SBRT in this inoperable re-irradiation cohort of patients produces initial acceptable local control at 1 year. Follow-up is continued for late toxicity events. Lateral pelvic disease, of small size will predicts that $D_{0.5cc}$ of small bowel volume within 2 cm of PTV will be lower than for larger non-lateral lesions. We propose limiting dose to 5cc of bowel within 2cm of PTV to 17.1 Gy as new parameter for SBRT re-irradiation.

EP-1462 Stereotactic body radiation therapy (SBRT) in metastatic colorectal cancer (mCRC)

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Purpose or Objective

It is estimated that 25% of patients with CRC have metastases at diagnosis and up to 50% will develop them during the course of the disease. Although the multidisciplinary treatment in advanced disease has undergone a remarkable improvement in recent years, the median OS of the patients not candidates for surgery is approximately 30 months. Ablative therapies such as SBRT have helped to increase this survival with high local control rates in patients with visceral metastases in retrospective series.