sites was prescribed. No upstaging of low risk patients to a higher risk was observed.
**Conclusions:** Our results have shown that Cho-PET seem to be a promising diagnostic tool in prostate cancer patients who are candidates to radical radiotherapy and supporting the decision making in treatment planning, in particular in intermediate-high risk. Although a simultaneous integrated boost on Cho-PET positive sites is still under investigation, it could be a possible option to intensify local radiation treatment in this setting.

**EP-1223**
**Endorectal balloons in prostate cancer radiotherapy: effects on seminal vesicle positioning**
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**Purpose/Objective:** Endorectal balloons (ERBs) can be used for the stabilisation of the prostate during radical external beam radiotherapy (EBRT). By reducing positional uncertainties, the internal margin may be decreased, reducing overall PTV volume. Studies have demonstrated reduced prostate motion, but the effect of ERBs on the seminal vesicles (SV) is less well reported. We aim to quantify ERB effect on seminal vesicle positioning.
**Materials and Methods:** Eight consecutive patients were chosen from a local prospective study into the feasibility of using ERBs in prostate EBRT practice. Patients eligible for the study were those undergoing radical EBRT as their primary treatment modality for localised prostate cancer. Planning scans were performed supine, bladder empty, with and without a 100cc air filled RectalPro ERB. Contouring was undertaken using Pinnacle (Version 9.6). The maximum A-P overlap between rectum and seminal vesicle was measured as distance from anterior rectal wall to posterior extent of SV (see Figure 1 for technique). This was measured for left and right SVs then averaged. Maximum lateral spread of seminal vesicles was measured on the slice demonstrating maximum distance between the lateral edges of the left and right seminal vesicles. Superior-inferior SV extent was measured from base to tip of seminal vesicles and averaged between left and right sides. Two-tailed, paired Student's T-tests were used to compare the ERB and no-ERB data.
**Results:** Maximum A-P overlap of the SV and rectum was significantly greater with an ERB in-situ than without (Mean: 1.78cm versus 0.65cm, $p<0.001$). Maximum lateral separation of the SV was significantly greater with an ERB in-situ than without (Mean: 6.69cm versus 6.34cm, $p=0.019$). Superior-inferior extent of SVs was significantly greater with ERB in-situ (Mean: 2.6cm versus 2.0cm, $p=0.0014$). SV volumes were not significantly affected by ERB presence.
**Conclusions:** One perceived benefit of ERB use in prostate radiotherapy is reducing rectal dosage. This is by firstly enabling a smaller PTV and secondly by pushing posterior rectum further from the high dose field. For intermediate or high risk patients who require full SV treatment this benefit may be negated by unfavourable positioning of the SV relative to the rectum. Here we show that the presence of an ERB causes increased lateral and superior-inferior spread of the SV, along with increased A-P overlap with the rectum. These previously undescribed anatomical alterations may influence planning of intermediate and high risk prostate cancer patients with ERB in-situ. Specifically, we hypothesise that increased A-P overlap may limit sparing of the posterior rectum when undertaking full length seminal vesicle irradiation. An on-going planning study at our institution will investigate this hypothesis.

**EP-1224 Stereotactic Body Re-irradiation Therapy for locally recurrent prostate cancer after EBRT**
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**Purpose/Objective:** The rate of biochemical failure after primary external-beam radiation therapy (EBRT) in prostate cancer is still not negligible, around 33%. Management of prostate cancer relapses after EBRT is still undefined. Re-irradiation schedules have been explored in different tumor sites. In this report, we present our preliminary experience of re-irradiation using SBRT for localized prostate cancer failure.
**Materials and Methods:** Between March 2011 and April 2014, robotic SBRT was administered to patients previously treated with external-beam radiation therapy to a median dose of 72 Gy (range, 45–76.5Gy) and with biochemical failure corresponding to a local in-field recurrence of prostate cancer. All patients underwent a pelvis MRI to confirm the recurrence and a total body staging using a 18F-choline positron emission tomography. The prescription dose consisted of five fractions of 7.25 Gy to a total dose of 36.25 Gy. Efficacy was evaluated based on biochemical response and toxicity was evaluated according to CTCAE v.4.0 questionnaires and International Prostate Symptom Score.
**Results:** Seventeen patients were treated (five urethrovesical anastomosis lesions, nine lesions within the prostate, and three in residual seminal vesicles) and followed for a median 6 months (mean, 9.4 months, range, 2.5–39.4 months). Median time between the first EBRT of prostate cancer and the first day of CyberKnife® treatment was 123 months (range, 38–398 months). A biochemical response was observed in 16 of the 17 evaluable patients (94.1%) and no in-field progression was reported. Only one patient had a biochemical failure 5 months after the treatment, correlating to metastatic progression without evidence of local recurrence. Treatment was well tolerated, with five cases of genitourinary or gastrointestinal acute grade 1 toxicities . No grade ≥ 2 or other acute toxicities were reported.
**Conclusions:** Stereotactic Body Re-irradiation Therapy using CyberKnife® after failed EBRT showed favorable results in terms of in-field local and biochemical control. Toxicity was low and acceptable. Further prospective studies are needed to confirm these results to select patient and to evaluate the introduction of androgen deprivation therapy.

**EP-1225**
**Is the short course ADT with 76Gy IGRT appropriate for intermediate and high risk prostate cancer?**