of 3D brachytherapy to clinical practice. Trans-vaginal ultrasound of cervical cancer offers width, height and thickness of cervical tumour and makes HR CTV contouring on CT images easier.

PO-1026
A mixed intracavitary and interstitial perineal template compatible with MRI for gynecologic malignancies
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Purpose/Objective: To present the experience in the daily practice of a novel MRI compatible perineal template developed in our Department, able to support both: an intravaginal probe (SIU) (intracavitary component. IC) and titanium needles (TN. Interstitial component) for MRI-Guided brachytherapy (BT) applications, in gynecologic malignancies. The template has been developed with the aid of Lorca Marín S.A, Murcia, Spain in the manufacturing process. In the MRI (General Electric 1,5 tesla) we use a T2 sequence for delineation of CTV and organ at risk following the recommendations of GEC-ESTRO and a 3D radio-frequency Spoiled Gradient recalled Echo (SPGR) sequence to recognize the applicator and TN (Figure). From April 2013 until November 2014, we have done sixteen implants. Fourteen patients were diagnosed of locally advanced cervix cancer until November 2014, we have done sixteen implants.

Results: Nine were staged as IIB (Figo 2009), 2, IIIB and II IV b. endometrial carcinoma. Median age 66 years (33-77 years). Fourteen patients were diagnosed of locally advanced cervix cancer. Median age 66 years (33-77 years). From April 2013 until November 2014, we have done sixteen implants. Fourteen patients were diagnosed of locally advanced cervix cancer. Median age 66 years (33-77 years). In the CC, BT have done after External beam radiotherapy (EBRT) over pelvis (median dose 50.4 Gy (48.6-53.7 Gy). All patients have received concomitant chemotherapy with EBRT. The dose administrated with BT have been 6 fractions of 4 Gy in four days in 14 patients, 6 fractions of 4.25 Gy in one patient because the delay between RTE and BT due to comorbidities. The dose has been prescribed to IR CTV in all cases following recommendations of GEC-ESTRO due to the characteristics of the interstitial implant. Median D90 to IR-CTV calculated with EQD2 in patients with locally advance CC (we have excluded the 2 recurrences in vagina because they are different behavior disease) is 80,5 Gy (62.5-84.2) with a median D90 in organ at risk (OR); bladder of 77,4 Gy (60.5-90,8Gy) and 69,9 Gy in rectum (58,3-83,7 Gy). The median overall survival is 13 months (2-19 months) with three patients with local persistence after BT. All doses in OR are under limits of GEC ESTRO recommendations.

Conclusions: This new template allows increasing the CTV of the BT procedures in locally advanced gynecological tumors in 4D MRI based BT, improving the possibilities for a more adaptative dosimetry with lower doses in OR.

PO-1027
Reducing vaginal wall dose for HDR interstitial brachytherapy of gynecological cancer: dosimetric comparison
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Purpose/Objective: Our previous interstitial brachtherapy (ISBT) experience was associated higher vaginal toxicities, especially for lower vaginal tumors, thus increasing our interest in minimizing vaginal wall dose. Previous guidelines for vaginal tolerance have been a point dose on the vagina wall from intracavitary brachtherapy. Advances in imaging and 3-D planning have allowed further investigation into volumetric dosimetry. The purpose of this study is to investigate whether altered dwell times for vaginal obturator needles can reduce the vaginal wall dose without compromising the target coverage.

Materials and Methods: To evaluate dosimetric changes on the vaginal wall dose, a vaginal cancer patient with ISBT was selected as a patient case. For comparisons, phantom case was set up which has parallel needle position as a perfect implant with same needle position as patient case. Vaginal wall was contoured as 0.5 cm thick volume around the vaginal surface of the obturator. Geometric optimization was used to create homogenous dose distribution on both phantom and patient cases as an initial treatment plan (20 Gy/4 fractions). To reduce high vaginal wall dose, five different plans was created with the modification of dwell times on the surface obturator needles relative to a central obturator needle. DVH evaluation was done on each plan to compare dosimetric parameters.

Results: The V150% dose was much larger in patient case than the phantom case due to the non-parallel needles. The modification of dwell times for the vaginal surface needles significantly reduced the volume of vagina wall receiving the V150% dose from 77.6% to 57.8% and V175% dose from 57.5% to 20.2% in patient case. Figure shows dose profiles from the vaginal surface of the obturator to the entire target volume between the needles (lowest dose area) in the phantom case. Modification of using 0% obturator surface needles after geometric optimization (plan 3) and no dwell position for inner obturator surface needles at the time of geometric optimization (plan 4) have lowest vaginal wall dose without changing target volume coverage.

Conclusions: To reduce high dose volume of the vaginal wall, we now routinely insert a needle into the central canal of the vaginal obturator and modify dwell times at the needles along the surface of vaginal obturator to reduce the volume of the vaginal wall from exceeding 150% prescription dose.