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 intracavitary probe (SIU) (intracavitary component. IC) and titanium needles (TN). Interstitial component) for MRI-Guided brachytherapy (BT) applications, in gynecologic malignancies. There are different manufactured templates for interstitial implants as ‘Martinez Universal Perineal Interstitial Template’ (MUPIT) with angled openings or the ‘Syed’ template. Two deficits are inherent to the previously commented commercially available templates: the IC being difficult to reach cervix in depth and the necessity to use CT for the dosimetry being both not compatible with MRI.

Materials and Methods: The developed template, adapts the currently existing manufactured MR compatibles intrauterine tubes (Nucletron-Elekta) allowing the deliver a large central dose, and TN, also compatible with MRI, with the capacity to cover the disease in all directions 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 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 carcinomas (CC) and 2 vaginal recurrences of papilar serous endometrial carcinoma. Median age 66 years (33-77 years). Two deficits are inherent to the previously commented commercially available templates: the IC being difficult to reach cervix in depth and the necessity to use CT for the dosimetry being both not compatible with MRI.

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.
PO-1028
Preliminary dosimetric results of MR-based IGABT for cervical cancer in comparison to standard plan
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Purpose/Objective: Brachytherapy is the cornerstone of radiotherapy treatment in cervical cancer. In the last decade an increasing number of publications based on single institution large series indicate MR based IGABT as the new gold standard of treatment allowing a dramatic decrease of morbidity and at the same time an increase in local control especially for large tumors. Hereby we describe preliminary dosimetric results of MR IGABT at our institution.

Materials and Methods: Since December 2012, 71 consecutive patients (median age 50.5; range 31-88.5) with a histologically proven diagnosis of locally advanced cervical cancer have been referred to GYN tumor board at our institution.

FIGO stage distribution was the following: 5 had Ib1, 4 had Ib2, 1 had IIA, 28 had IIB with mid proximal parametrial invasion, 12 had IIB with distal parametrial invasion, 1 had IIIA, 13 had IIIB (11 because pelvic wall invasion), 7 had IVA cancers. All cases were Diagnostic routine for all patients, just after the finishing of her treatment and before the applicators removed from her body. The scanning protocols (e.g. the amount of normal saline injection to the bladder Foley) were the same as the first CT imaging. Organ contouring and applicators reconstructions were performed with the same physician and physicist. The first 3D treatment planning were copied

PO-1029
Intra-fractional organ position variation evaluation during HDR intracavitary brachytherapy of cervical cancer
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Purpose/Objective: Image-Guided brachytherapy (IGBT) is related to treatment based on the 3D imaging for the planning procedure, not for the evaluation of the precision and accuracy of the treatment, which is the goal of the Image-Guided radiotherapy (IGRT). The aim of this study was assessment of probable intra-fractional organ displacement after the 3D imaging of the planning purpose.

Materials and Methods: Thirty intracavitary brachytherapy insertions (with Rotterdam’s tandem and ovoid applicators) of cervical cancer patients were studied. A CT scanning were done for each of the cases, for treatment planning, after the applicator insertion. Treatment planning was based on getting 80-90 Gy total dose to D90 of the HR-CTV (EQD2) and 70Gy and 80Gy for rectum and bladder (D2cc), respectively. For each of those insertions a second CT scan were performed for the patients, just after the finishing of her treatment and before the applicators removed from her body. The scanning protocols (e.g. the amount of normal saline injection to the bladder Foley) were the same as the first CT imaging. Organ contouring and applicators reconstructions were performed with the same physician and physicist. The first 3D treatment planning were copied