Abstracts

AS22. Vulvar and vaginal cancer

PR095/#215  HPV-ASSOCIATED AND HPV-INDEPENDENT VULVAR SQUAMOUS CELL CARCINOMA: IS THERE AN IMPACT OF RESECTION MARGINS ON LOCAL RECURRENCE?

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Introduction Vulvar Squamous Cell Carcinoma (VSCC) is classified as Human Papilloma Virus Associated (HPV-A) or HPV independent (HPV-I), with HPV-I VSCC having greater risk of recurrence and poorer survival. Surgical guidelines do not distinguish between the aetiologies and all previous surgical margins publications report the aetiologies together, traditionally recommending a 8 mm pathological margin. This study investigates the impact of resection margins on VSCC first local recurrence stratified by HPV-A and HPV-I subtypes.

Methods A retrospective single centre clinico-pathological case note review of 314 patients treated with primary surgery for VSCC between January 1990 to December 2018. The impact of resection margins on first local recurrence was assessed for HPV-A and HPV-I tumours separately in both univariable and multivariable analyses.

Results Local recurrences occurred in 9/143 HPV-A VSCC (6.3%) compared to 45/171 HPV-I VSCC (26.3%). In HPV-A VSCC, resection margins <8 mm compared to >=8 mm were not associated with local recurrence in univariable analysis (HR 0.63, 95% CI 0.17–2.39, p=0.50). Low case numbers prevented multivariable analysis. In HPV-I VSCC, resection margins <8 mm were associated with increased local recurrence compared to >=8 mm in univariable analysis (HR 1.90, 95% CI 1.05–3.44, p=0.03), but this finding was attenuated in the multivariable analysis (HR 1.55, 95% CI 0.79–3.05, p=0.20).

Conclusion/Implications In HPV-I VSCC, there is some evidence that resection margins may impact local recurrence, but further prospective study is needed. Analysis for HPV-A VSCC was limited by the low recurrence rate. HPV testing may be utilised in VSCC management protocols to individualise treatment.

PR096/#261  THE EFFECT OF KNOWN PATHOLOGICAL RISK FACTORS ON THE INCIDENCE OF METASTATIC LYMPH NODES AND SURVIVAL IN EARLY-STAGE VULVAR CANCER- SEER ANALYSIS

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Introduction We aimed to evaluate, in a large database of patients with vulvar cancer, the incidence of positive lymph nodes with relation to known pathological risk factors, and specifically among those with apparent low grade, small size tumors.

Methods We used the Surveillance, Epidemiology and End Results (SEER) database to identify vulvar squamous cell cancer (VCC) patients, with known tumor size and regional lymph nodes examined. A comparison between patients who had positive and negative lymph nodes was conducted, with relation to survival. Subgroup analysis was conducted in patients diagnosed with grade 1 vulvar SCC and tumor size up to 2 cm according to the status of lymph nodes.

Results Multivariate analysis found that both grade of disease and tumor size were significant factors in predicting lymph nodes status. Among those with tumors of low grade, small size tumors up to 2 cm, the odds ratio for positive lymph nodes was found to be 2.5 for those with tumor size more than 1 cm. In a multivariate survival analysis older age, larger tumor size and positive lymph nodes were independently associated with decreased survival.

Conclusion/Implications Our study confirmed that among small size tumors, those above 1 cm size have a significantly increased risk for positive nodes compared to those under the size of than 1 cm, and among this specific group, patients with nodes positive have decreased survival. Future studies are needed to answer the question, if in the era of sentinel node procedure, it is safe to omit lymph node evaluation all together.

PR097/#455  3D-PRINTED VAGINAL INDIVIDUALIZED APPLICATOR (VIA) SIMPLIFIES PROCEDURE AND OPTIMIZES DOSIMETRY FOR GYNECOLOGIC INTERSTITIAL BRACHYTHERAPY

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Introduction Optimally placing interstitial needles for interstitial only gynecologic brachytherapy requires time and expertise. Individualized vaginal templates to guide needles to dosimetrically beneficial positions could simplify interstitial procedures, decrease procedure time, improve needle distribution and optimize dosimetry.

Methods We developed a novel approach using 3D printed Vaginal Individualized Applicator (VIA) templates that contain internal channels that guide interstitial needles from the vaginal introitus to the desired locations within the tumor. A series of 9 patients underwent 2 interstitial procedures each separated by approximately 1 week with the first procedure involving standard freehand/template-based interstitial and the second procedure utilizing a customized VIA. All patients underwent a pre-brachytherapy MRI, and both CT and MRI were performed following interstitial placement.

Results We have created and used clinically 3D printed VIA templates for interstitial gynecologic brachytherapy. In clinical use the novel VIA had an average procedure time of 44.8 minutes, approximately 43% shorter than the average of 79.1 minutes for the standard interstitial cases. The average CTV volume was 32.1 cc for the initial standard approach and 26.9 cc for VIA. The traditional and VIA cases averaged similar number of needles (14, 3) and maintained similar excellent dosimetry with an average CTV V100% of 94.4%, 94.5%, respectively.
Conclusion/Implications Our team developed a novel 3D printed VIA template that significantly facilitates gynecologic interstitial brachytherapy by simplifying the placement of needles and significantly decreasing procedure time while maintaining excellent dosimetry.

**Introduction**

Cervical cancer is not the only cancer attributable to human papillomavirus (HPV). Of vaginal cancers around 78% and of vulvar cancers around 25% are caused by HPV. The number of these cancers is estimated to grow among younger women as HPV prevalence rises. The world population growth and aging will also increase the burden of these cancers. Our aim was to examine if HPV screening for cervical cancer could have an additional beneficial effect and prevent also vaginal and vulvar cancers. To assess this, we used a long-term follow-up data of the Finnish randomized HPV screening trial.

**Methods** Between 2003 and 2007, over 236,000 individuals were randomized (1:1) to HPV or to cytology screening in Southern Finland. The median follow-up time was 15 years. To compare the study arms, we calculated the incidence rate ratios for vaginal and vulvar cancers combined using Poisson regression. Analyses were performed with the intention to treat -principle.

**Results** During 3.5 million person-years of follow-up, we detected a total of 51 vaginal or vulvar cancers and 12 cancer deaths in the HPV arm, and 78 cancers and 18 cancer deaths in the cytology arm. The incidence rate ratio for vaginal and vulvar cancers was 0.67 (95% CI 0.47–0.94) in the HPV arm compared to the cytology arm.

**Conclusion/Implications** Based on our results, HPV screening could prevent vaginal and vulvar cancers. The result is promising and suggests that the growing burden of vaginal and vulvar cancers could be reduced by HPV screening. Further research on the topic is needed.

**ePoster Viewing**

**AS01. Basic/Translational science**

**EP001/#255** KNOCKDOWN OF E-CADHERIN EXPRESSION PROMOTE CERVICAL CANCER PROGRESSION THROUGH EGFR SIGNALING PATHWAY

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**Introduction** The expression of E-cadherin, a crucial cell adhesion molecule, plays a significant role in the progression of various malignancy. However, the role of E-cadherin in cervical cancer has not been elucidated yet. Therefore, we aimed to investigate the expression of E-cadherin in cervical cancer patients and its association with the pERK signaling pathway.

**Methods** Immunohistochemical analyze E-cadherin and pERK were performed using tissue microarray of cervical cancers and normal cervical epithelial tissues and clinicopathologic