raises the possibility of trans vaginal ultrasonographic follow-up in asymptomatic cases showing no suggestive features of malignancy. Further studies on larger numbers are needed to confirm the safety of follow up. Scanning the RRS can be performed during routine transvaginal examination. This can contribute to the diagnosis of rare, but potentially serious conditions.

OP14.05

How good is SmartPelvic software at measuring the levator hiatus?

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Objectives: One of the most important measures obtained on pelvic floor ultrasound is the area of the levator hiatus on Valsalva. Manual measurement involves substantial user effort, suggesting an opportunity for automation. Several manufacturers now offer AI-based automatic measurement of hiatal dimensions.

Methods: This was an observational study in women attending a tertiary urogynecological unit in 2023. All had a 4D pelvic floor ultrasound with a Mindray Nuewa 9 system. The software includes single button detection and measurement of hiatal dimensions. Manual measurements were performed first, the automated method second to guarantee blinding. The figure shows a comparison of manual (left) and automated (right) measurements of the hiatus on Valsalva. Outliers (patients in whom measurements differed by 20% or more) were reviewed separately by the authors.

Results: 104 women were seen. Three automatic measurements were unavailable, leaving 101 for comparison. Means were 25.9 (SD 8.4) and 28.9 (8.6)cm^2 for manual and automated measurements respectively. Correlations were high (Pearson's r = 0.842, P < 0.001) but the difference is significant (P < 0.001), with Bland Altman analysis showing a systematic error.

In 22 cases the discrepancy between automatic and manual measurement was >=20%. These were reviewed separately. In most instances the discrepancy was due to excessively cranial placement of the region of interest (n = 16); in three cases the ROI was not centred, leading to mis- identification of the plane of minimal dimensions. Sub-optimal boundary conditions seemed responsible for a systematic over-estimate.

Conclusions: The SmartPelvic software produces measurements that are strongly correlated with manually obtained data. It produces a systematic error however, partly due to sub- optimal boundary conditions, partly due to excessively cranial placement of the region of interest. Inexperienced users are advised to check measurements manually, especially in women with large rectocele or recto-enterocele. Development of this software is ongoing, suggesting that improvement is to be expected.

OP14.06

A preliminary study on the measurement of anal sphincter in healthy adult women by transluminal dual plane shear wave elastography

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Objectives: To explore the applicability of transluminal dual plane shear wave elastography(TDPSWE) for measuring the anal sphincter(AS) in healthy adult women.

Methods: TDPSWE was performed on 140 healthy adult women. The thicknesses of internal anal sphincter (IAS) and the deep, superficial, subcutaneous parts of external anal sphincter (EAS) were measured at 3, 6, 9, and 12 o 'clock under resting state(RS) and maximum anal contraction state(MACS), meanwhile, the Young's modulus(YM) of EAS at 3, 6, and 9 o 'clock were measured by real-time shear wave elastography. Compare the differences of the above parameters in different states under the same orientation and different orientations under the same state.

Results: 1. EAS at 12 o'clock could not be detected.

2. At MACS, there was no statistically significant difference with the thickness of IAS at 3, 6 and 9 o'clock at RS ($P>0.05$); Under the same state, the thickness of IAS at 3, 6 and 9 o'clock were compared with each other, the thickness at 6 o'clock was smaller than that of 9 o'clock, with a statistically significant difference ($P < 0.05$). At MACS, the thickness of the deep, the superficial, subcutaneous parts of EAS and YM of elasticity of EAS at3, 6 and 9 o'clock were higher than those at RS, with statistically significant difference ($P < 0.05$); Under the same condition, the thickness and YM of elasticity of EAS at 3, 6, and 9 o'clock were compared in pairs, the thickness and YM of elasticity of EAS at 3 o'clock were smaller than the corresponding values of EAS at 6 o'clock and 9 o'clock, the differences were statistically significant ($P < 0.05$), in addition, there was no statistically significant difference between EAS at 6 o'clock and 9 o'clock ($P>0.05$).

Conclusions: TDPSWE can measure the AS in healthy adult women, preliminarily establish a new method for measuring AS.

Supporting information can be found in the online version of this abstract

OP14.07

Identifying weak points of pelvic floor by sonoelastography in case of stress incontinence

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Objectives: The most common type of urinary incontinence is stress urinary incontinence (SUI), which is characterised by the involuntary loss of urine during everyday activities (e.g. exercising, coughing, sneezing). This compromising the quality of life for women. SUI presents as a consequence of lower urinary tract dysfunction coupled with weakened pelvic floor tissues. Primary issue is the lack of tissue support to the upper urethra and bladder outlet. The aim of our study to assess the condition of the pelvic floor tissues in women suffering from stress incontinence, and to map the weak points of the pelvic floor using ultrasound elastography.

Methods: We recruited 40 patients for the study, from the Urogynecology Department of the Obstetrics and Gynecology Clinic at the University of Szeged. Half of the women were asymptomatic and formed the control group, while the other half suffered from stress incontinence.

Two different ultrasound methods were employed in our research:

I.) Transvaginal 2D ultrasound to examine the mobility of the bladder neck and urethra

II.) Transvaginal sonoelastography to determine the elasticity of the paraurethral connective tissues, in 3 points:

1.) The tissue environment surrounding the internal sphincter muscle of the bladder

2.) The endopelvic fascia and tissue environment in the midsection of the urethra

3.) The tissues surrounding the external urethral orifice.

Results: Significant correlations were found between the mobility of the bladder neck - urethra and changes in the elasticity of the paraurethral connective tissues. The sonoelastography results showed a close relationship with the patient's age and BMI values.

Conclusions: Sonoelastography is a non-invasive imaging method with the potential to semiquantitatively assess the elasticity properties of in-vivo tissues. We hope that our findings contribute

to the objective assessment of incontinence and the monitoring of treatments effectiveness, last but not least it enables more effective personalised treatment methods.

OP14.08
The role of three-dimensional ultrasound in the evaluation of urogenital prolapse: a prospective study of 20 patients

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Objectives: Pelvic organ prolapse results from inadequate structural support, causing pelvic organs to protrude, with the pubococcygeus muscle delineating the critical levator hiatus. Pelvic organ prolapse results from inadequate structural support, causing pelvic organs to protrude, with the pubococcygeus muscle delineating the critical levator hiatus. This study assesses the efficacy of three-dimensional perineal ultrasonography in measuring the levator hiatus to guide surgical correction for pelvic organ prolapse. It also investigates pre- and postoperative quality of life, patient satisfaction, and ultrasonographic predictors of recurrence.

Methods: A prospective longitudinal study was conducted at the Bizerte gynecology-obstetrics department from July 2023 to January 2024. Surgical interventions, including laparoscopic promontofixation or vaginal sacrospinofixation per Richter, were performed. Functional and clinical evaluations, along with pre- and postoperative 3D perineal ultrasound examinations, were conducted by the same clinician, assessing various parameters such as genital hiatus area, anus elevator muscle appearance, post-void residual, bladder wall thickness, cervical elongation, bladder neck position, and urethral mobility.

Results: Twenty patients participated. Surgery reduced the levator hiatus zone from an average of 24 to 18cm^2 at rest. Simplified POP-Q measurements showed no significant change, except for points C or D. Hypertrophic cervical elongation ($\geq$4cm) and levator ani avulsions remained predictors of recurrence. A larger hiatus area correlated with increased bladder neck mobility. Prolapse repair decisions should be individualised, considering bladder capacity and postoperative goals.

Conclusions: Three-dimensional ultrasonography provides a novel approach to objectively assess the levator hiatus and explore ultrasonographic predictors of prolapse recurrence, contributing to improved clinical outcomes in pelvic surgery.

OP15: SCREENING FOR PREGNANCY COMPLICATIONS IV

OP15.01
Interactions between ambient cold exposure and PM_1 on hypertensive disorders of pregnancy among Chinese pregnant women: a nationwide cohort study

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Objectives: To assess effect modification by temperature exposure on the PM_1-blood pressure (BP)/hypertensive disorders of pregnancy (HDP) associations among Chinese pregnant women based on a nationwide study.

Methods: We conducted a cross-sectional country-based population study in China, enrolling 86,005 participants from November 2017 to December 2021. BP was measured with standardised sphygmomanometers. HDP was defined according to the American College of Obstetricians and Gynecologists' recommendations. Daily temperature data were obtained from the European Centre for Medium Range Weather Forecasts. PM_1 concentrations were evaluated using generalised additive model. Generalised linear mixed models were used to examine the health effects, controlling for multiple covariates. We also performed a series of stratified and sensitivity analyses.

Results: The pro-hypertensive effect of PM_1 was observed in the first trimester. Cold exposure amplifies the first trimester PM_1-BP/HDP associations, with adjusted estimate ($a\beta$) for systolic blood pressure (SBP) of 3.038 (95% CI: 2.320 - 3.755), $a\beta$ for diastolic blood pressure (DBP) of 2.189 (95% CI: 1.503 - 2.875), and aOR for HDP of 1.392 (95% CI: 1.160 - 1.670). Pregnant women who were educated longer than 17 years or living in urban areas appeared to be more vulnerable to the modification in the first trimester. These findings remained robust after sensitivity analyses.

Conclusions: First trimester maybe the critical exposure window for the PM_1-BP/HDP associations among Chinese pregnant women. Cold exposure amplifies the associations, and those with higher education level or living in urban areas appeared to be more vulnerable.

OP15.02
The diagnostic accuracy of the NICE risk-stratification algorithm in predicting pre-eclampsia: a systematic review with meta-analysis

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Objectives: The National Institution for Health and Care Excellence (NICE) risk-stratification algorithm is outlined in NICE guideline NG133. The algorithm dichotomises women as being at either high- or low-risk of developing pre-eclampsia and recommends that only the former be prescribed aspirin prophylaxis. Despite its near-global popularity, the algorithm's accuracy has, hitherto, never been systematically reviewed. As such, our analysis aimed to appraise the existing literature and to generate maximum-likelihood estimates (MLEs) for the sensitivity (Se) and specificity (Sp) of the algorithm in predicting pre-eclampsia.

Methods: Systematic searches of SCOPUS, Cochrane and PubMed yielded 20 eligible studies and 894,527 pregnancies. The Se and Sp of the algorithm was calculated for the prediction of pre-eclampsia at any gestation, < 37 weeks (preterm) and < 34 weeks (early-onset), respectively. Their logit transformations were modelled as a bivariate distribution with random effects to generate MLEs for the overall Se and Sp of the algorithm. Heterogeneity was evaluated via I^2 values and Cochran's Q-statistic. Figures are reported as MLE (95% CI).

Results: The algorithm was found to predict pre-eclampsia with a Se of 43.3% (32.6-54.7) and a Sp of 91.0% (84.0-95.1). In predicting preterm pre-eclampsia, it achieved Se of 53.4% (30.0-75.9) and Sp of 91.4% (86.7-94.5), respectively, while these figures reached 47.5% (23.3-72.9) and 85.6% (78.9-90.4), respectively, for the prediction of early-onset disease. High heterogeneity in each of these values means that there is a low degree of certainty therein.

Conclusions: The NICE algorithm's false positive rate of 9.0% (4.9-16.0) is likely to result in unnecessary maternal morbidity through superfluous prescribing in women who would not otherwise develop pre-eclampsia. In addition, it fails to identify 56.7% (45.3-67.4) of women who later develop pre-eclampsia, limiting its utility as a tool for allocating aspirin prophylaxis. Alternate algorithms should be adopted for this purpose.