

EP19.14 Point of Care Ultrasound In Gynaecology compared to Standard Care

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Introduction:

Point-of-care ultrasound (POCUS) has revolutionised bedside diagnostics across multiple specialties. More recently, its application in obstetrics and gynaecology has gained attention, particularly in the early assessment of pregnancy. With the advent of handheld ultrasound devices, POCUS has become increasingly accessible, offering real-time diagnostic information without the delays associated with formal radiology assessments. Despite these advantages, concerns remain regarding diagnostic accuracy, operator dependency, and variability in training.

Objectives:

To assess the concordance and correlation of ultrasound findings of POCUS compared to standard care (high-end ultrasound) in gynaecology for patients presenting to a London Tertiary Centre.

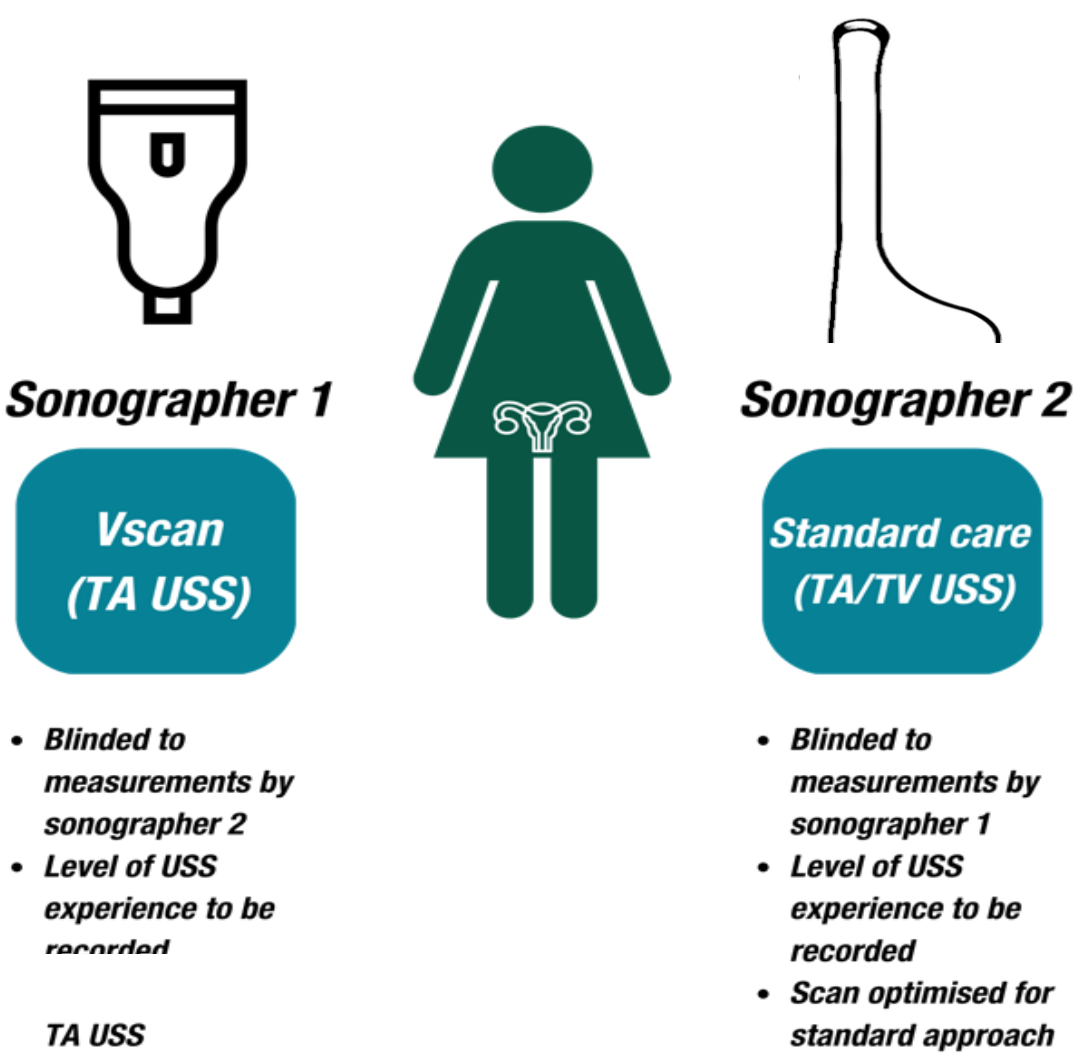


Methods:

Patients presenting to gynaecology units (Emergency Gynaecology or Outpatient Clinics) who would have an USS as part of their care were offered an additional trans abdominal ultrasound with a handheld ultrasound machine. In this study we used the GE Vscan ®

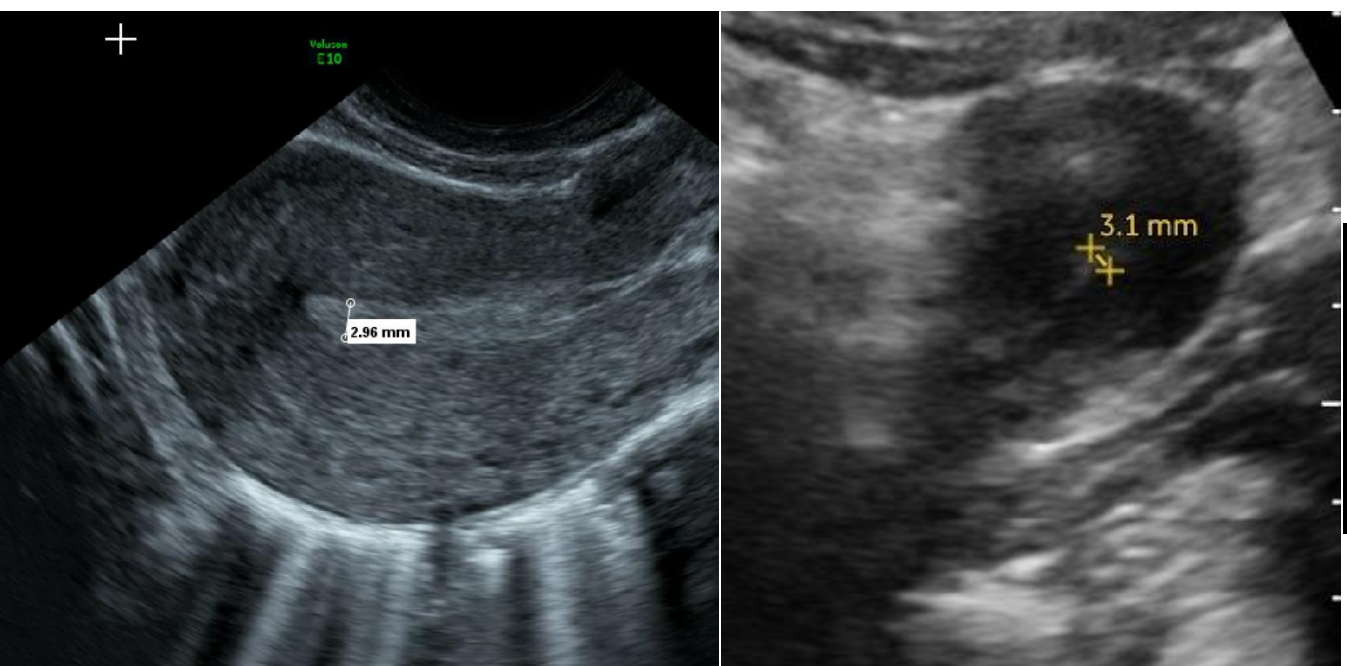
We will be looking at:

- Pelvic organs (uterus, ovaries)
- Endometrial Thickness
- Pathology (uterine, adnexal masses)
- Where adnexal mass seen
 - Characterisation
 - Cyst Content
 - Max cyst diameter



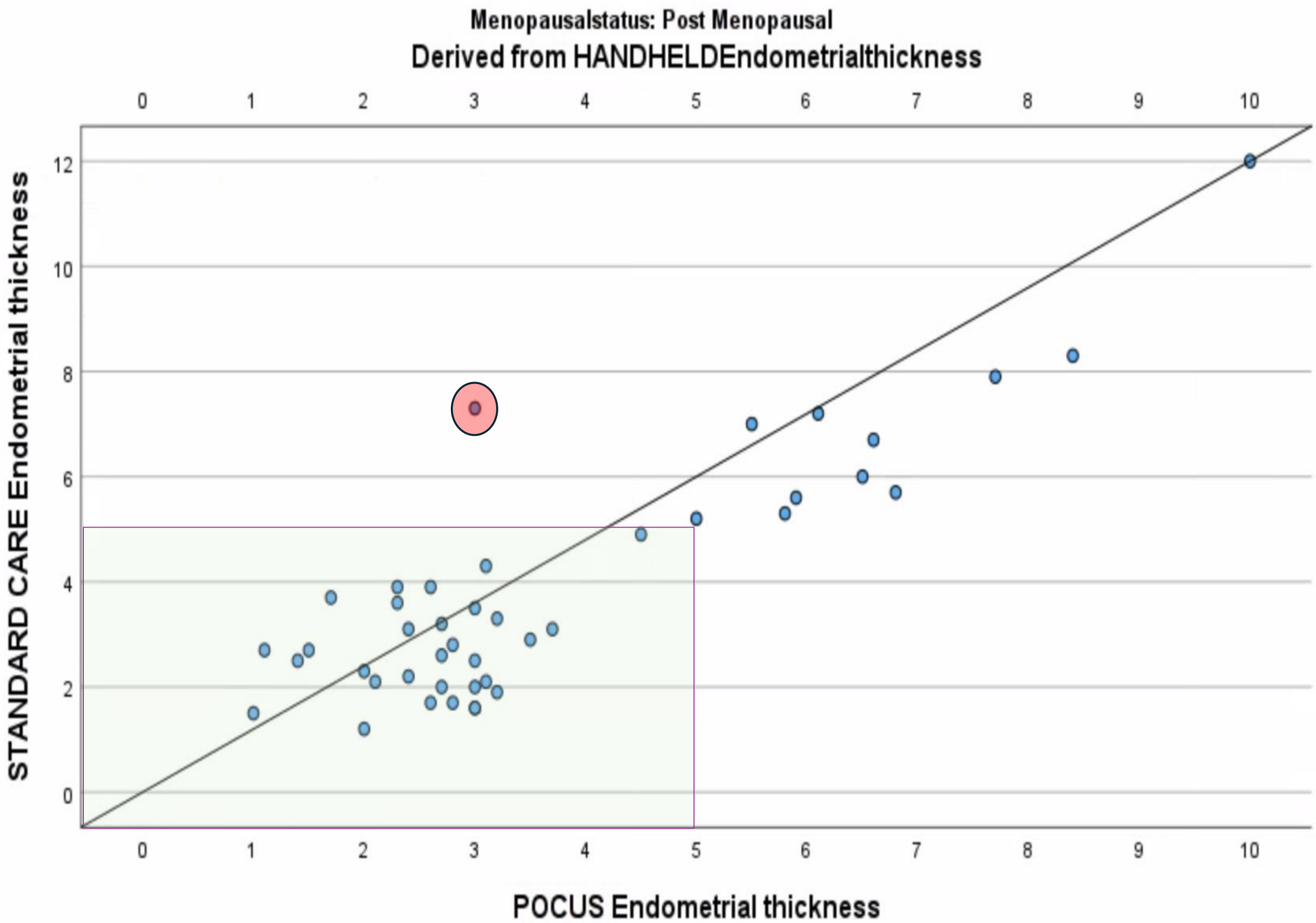
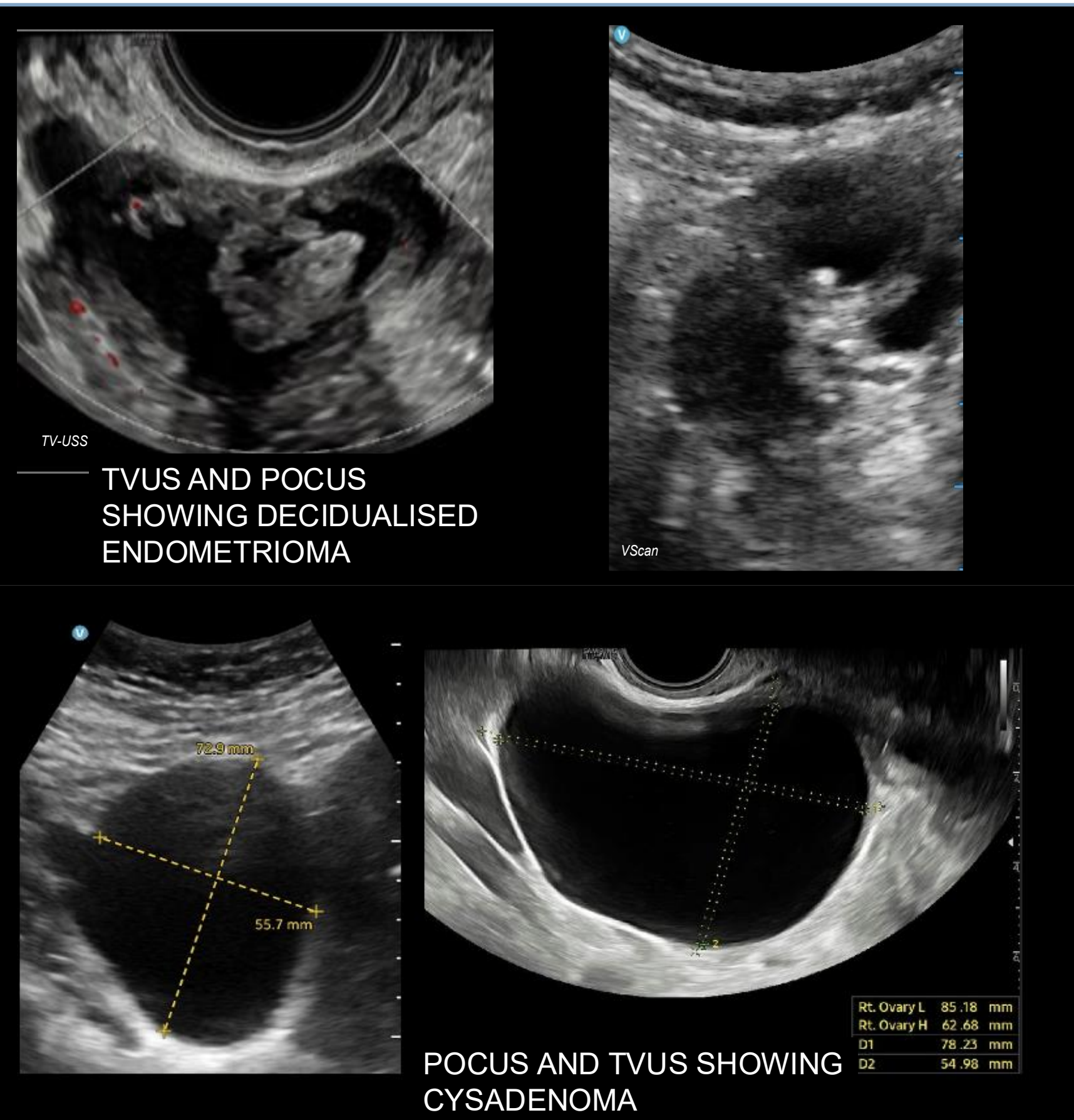
Results: 218 patient were scanned with both standard care and POCUS. Agreement between handheld ultrasound (POCUS) and standard care varied across assessed features. Concordance was fair for uterus visualisation ($\kappa=0.302$) and ovarian visualisation ($\kappa=0.175$). Moderate agreement was seen for subjective assessment ($\kappa=0.505$). However, where there was a cyst, you were much more likely to see the ovary. Substantial concordance was demonstrated for adnexal mass visualisation ($\kappa=0.564$), lesion type ($\kappa=0.641$), and characterisation ($\kappa=0.700$). The highest agreement was observed for cyst content ($\kappa=0.821$, almost perfect). Agreement was stronger in pre-menopausal cases ($\kappa=0.641$) than post-menopausal ($\kappa=0.462$). When looking at correlation the POCUS performed much better with maximum cyst diameter and importantly with endometrial thickness in the post menopausal population.

Concordance	
Variable	Kappa Value
Uterus Visualised	0.30 (Fair Agreement)
Ovaries Visualised	0.18 (Slight Agreement)
Adnexal Mass Visualised	0.56 (Moderate) Pre Menopausal: 0.64 (Substantial) Post Menopausal: 0.46 (Fair)
Type of Lesion (unilocular, multilocular, solid)	0.64 (Substantial)
Cyst Content	0.82 (Almost Perfect)
Characterisation	0.70 (Substantial)
Subjective Assessment	0.51 (Moderate)



TVUS and then POCUS showing an anteverted uterus with endometrial measurements.

Correlation	
Variable	Pearsons Correlation
Endometrial Thickness	0.39 (0.26 in pre menopausal and 0.87 in post menopausal)
Maximum cyst diameter	0.86



Conclusions:

This study demonstrates variable agreement between handheld ultrasound and standard care, with weaker concordance for uterine and myometrial features but encouraging results for adnexal assessment. Larger sample sizes are required to strengthen the reliability of these findings. Importantly, ovaries were more likely to be visualised where a cyst was present, with good concordance in maximum cyst diameter and characterisation. Endometrial thickness also showed promising correlation in the post-menopausal population. At present, handheld scanning may be most useful in triage and research settings, but these results support potential clinical integration especially in settings where transvaginal ultrasound is not freely available.