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TRANSLABIAL ULTRASOUND COMPARED TO INTERNATIONAL CONTINENCE SOCIETY POPQ SCORING SYSTEM AND COLPO-CYSTO-DEFECOGRAPHY IN CLINICALLY RELEVANT PATIENTS

Hypothesis / aims of study

In order to detect the pelvic organ prolapse, the real time translabial ultrasound (TUS) technique is suggested as less invasive, highly acceptable, ready available, and cheaper investigation tool in comparison with a radiological examination. Since there are only few data reporting on the correlation between the clinical exam and imaging techniques, we performed the retrospective study to evaluate the clinical value of pelvic floor ultrasound.

Study design, materials and methods

The 335 consecutive patients, mean age 61 (range 20-87), were referred to an ultrasound Department of pelvic floor unit in the tertiary referral clinic between February 2006 and September 2007. All patients underwent the standard questionnaire, and were examined using the translabial 2D/3D/4D ultrasound. Translabial ultrasound was performed in supine position and after prior voiding, using GE Kretz Voluson 730 Expert System and a RAB 4-8 MHz probe. The volumes were obtained at rest, on pelvic floor contraction and on Valsalva manoeuvre. The analysis of the data sets was undertaken using the GE Kretz 4D view software. The cystocele, uterine descent, and enterocele were diagnosed in reference to the inferior margin of pubis (1), and scored positive if > -1cm from the reference line. Rectocele was considered clinically relevant if there was a defect of the rectovaginal septum of more than 10mm, seen as sharp discontinuity in the ventral anorectal muscularis. Clinically relevant prolapse was defined if ICS POPQ points were ≥ -1: for the anterior compartment points Ba and/or Aa, for the uterine prolapse points C and/or D and for the posterior compartment points Bp and/or Ap. Colpo-Cysto-Defecography (CCD) was performed using a standardized technique, with images acquired at rest, Valsalva and straining. The grade of cystocele, central compartment descent, entero- and rectocele was rated on the scale from I to III, as mild, moderate or severe, respectively. Finding of intussusceptions was omitted in this study. All investigations were performed by three different examiners, blinded to each others findings.

Results

In 244 patients the clinical exam with ICS POP-Q score was performed few days/ weeks prior or after the ultrasound. For 127 of them, the CCD was available. In 142 patients the clinically relevant anterior compartment prolapse was found by clinical examination but only 73 of them underwent CCD. From 85 patients considered with clinically relevant central compartment prolapse, 51 were also seen with CCD. The 94 patients were diagnosed with clinically relevant posterior compartment prolapse, in 68 of 94 CCD report was available, and in all of them certain degree of posterior prolapse was found.

In 20 of 94 women with posterior compartment descent, no entero and/or rectocele was detected by ultrasound. Using ultrasound we could not see any posterior defect in 5 out of 68 patients with positive findings on CCD. Specifically, in two women severe uterine descent and cystocele were diagnosed by US and in three other patients two light grade recto-enterocele and mild descent of posterior compartment was reported on CCD.

Interpretation of results

Our study indicates that just few cystocele's (9%) would be missed by ultrasound of those detected by CCD, and about 14 % of those detected by clinical examination. Three fourths of enterocele's found on CCD would be detected by ultrasound. High false positive rate, over-diagnosis of cystocele's by ultrasound compared to the POP-Q score, could mean that actual reference line on ultrasound (inferior margin of pubic bone) lies a bit too high comparing to hymeneal ring. Regarding the low specificity for rectocele detection by ultrasound, we should reconsider finding of smaller herniations of ampula recti as clinically not relevant rectovaginal defects. Low sensitivity is most probably the result of perineal hypermobility, not considered by ultrasound as a real rectocele (2).

compartment	**anterior**	**posterior**		**central**	
Clinicaly relevant	**cystocele**	**enterocele**	**rectocele**	**uterus**	**uterus and/or enterocele**
TUS	122 (58%)	46 (19%)	61 (25%)	46 (19%)	72 (30%)
POP-Q	142 (50%)	94 (39%)	94 (39%)	85 (35%)	85 (35%)
TUS & POPQ	244 (100%)	244 (100%)	244 (100%)	244 (100%)	244 (100%)
TUS	53 (73%)	26 (38%)	46 (67%)	23 (45%)	44 (86%)
CCD	58 (79%)	34 (50%)	62 (91%)	51 (100%)	51 (100%)
TUS & CCD	73 (100%)	68 (100%)	68 (100%)	51 (100%)	51 (100%)

		PPV	**NPV**	**False positive**	**Specificity (%)**	**False negative**	**Sensitivity (%)**
cystocele	US/POP-Q	0,76	0,76	0,37	63	0,14	86
	US/CCD	0,85	0,54	0,6	40	0,09	91
enterocele	US/POP-Q	0,66	0,72	0,16	84	0,51	49
	US/CCD	0,79	0,67	0,29	71	0,25	75

rectocele	US/POP-Q	0,47	0,71	0,45	56	0,35	65
	US/CCD	0,98	0,25	0,17	83	0,24	76
uterus	US/POP-Q	0,65	0,77	0,16	84	0,45	55
	US/CCD	1	0	0	100	0,55	45
uterus+entero	US/POP-Q	0,54	0,88	0,39	61	0,15	85
	US/CCD	1	0	0	100	0,14	86

Concluding message

There is still a disagreement between different investigation procedures for diagnosis of the pelvic organ prolapse. These results suggest that we should consider an adjustment of the ultrasound reference line, in agreement with recent study (3). A descent of about 1cm below the symphysis pubis for cystocele and rectocele would be appropriate in order to detect only clinically relevant descent. We also suggest further studies focusing on the comparison between symptomatic and asymptomatic population.

References

1. Ultrasound Obstet Gynecol 2001; 18: 511-514
2. Ultrasound Obstet Gynecol 2005; 26: 73-77
3. Ultrasound Obstet Gynecol 2007; 29: 668-691

Specify source of funding or grant	**No external funding or grants were received for the study**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**investigation involves a routine examination of pelvic floor patient but it followed the rules in the Declaration of Helsinki. Informed consent was not obtained from the patients.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**