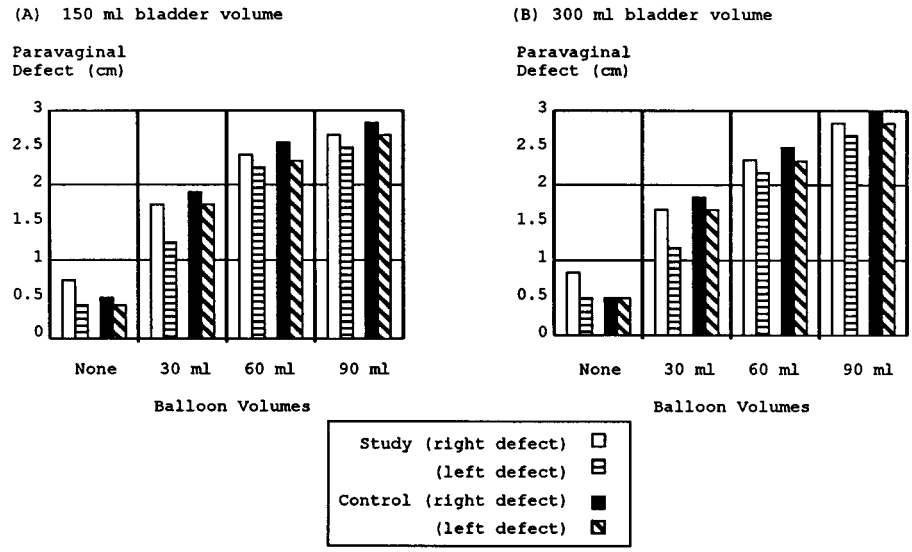

Conclusion: Transabdominal ultrasound does not appear to be useful in detecting paravaginal defects.

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THE QUANTIFICATION OF UTEROVAGINAL PROLAPSE BY ULTRASOUND: A COMPARISON WITH THE ICS PROLAPSE ASSESSMENT SYSTEM

Aims of Study

For more than 10 years translabial ultrasound has been used to assess the lower urinary tract in urinary incontinence and prolapse (1,2,3,4). Descent of the urethra and bladder outlet can be quantified against the inferoposterior margin of the symphysis pubis. However, little attention has so far been paid to descent of the uterus, vaginal vault and posterior vaginal wall (5). Cervix, cul de sac and rectum can be visualized with translabial ultrasound. We aimed to compare the data obtained by ultrasound quantification of prolapse with the results of clinical assessments carried out according to the recently introduced ICS pelvic organ prolapse classification system (6,7) and traditional clinical prolapse staging.

Methods

76 patients referred for urogynaecological assessment were examined clinically by two authors (BTH, JB) and by translabial ultrasound by the other author (HPD). For a pilot study (n=26), BTH was blinded against the ultrasound result. Subsequently, both examiners were blinded against each other's results. As results did not differ significantly, both groups were merged for analysis.

The pelvic organ prolapse classification system of the International Continence Society (6,7) involves the identification of points on the anterior and posterior vaginal wall as well as vault or cervix and the measurement of their descent with straining, with the hymen serving as the reference point. The examination was carried out in the supine position and with bladder emptied.

Ultrasound was also performed supine with bladder emptied, using 3.5 -5 MHz curved array probes on several commercially available ultrasound systems. The probe was

covered with a glove and placed on the perineum in a sagittal direction. The patient was asked to cough and strain. On obtaining maximum descent, images were taken and the position of the bladder neck, lowest part of a cystocele, the cervix, cul de sac and rectum determined relative to the infero-posterior margin of the symphysis pubis. Numerical findings for descent of the anterior and posterior vaginal wall as well as for the cervix were compared. The findings were also correlated with a traditional graded organ prolapse assessment (grades I- III).

Results

1.) Clinical staging and ICS system

Table 1 summarizes a comparison between traditional clinical staging and both ICS system and ultrasound assessment of uterine, anterior and posterior vaginal wall descent. Figures are means (SD). For uterine or vault descent ultrasound coordinates were reliably obtained only in 10 patients with no descent, 13 patients with stage I and all 7 patients with stage 2 or 3 descent. 31 patients had had a hysterectomy.

Cystocele	**0 (n=31)**	**I (n=28)**	**II (n=9)**	**III (n=8)**
ICS point Ba	-2.61 (.71)	-1.35 (.78)	1.11 (1.53)	2.25 (1.16)
US coordinates	-1.36 (1.06)	-0.1 (1.2)	1.67 (.92)	3.61 (1.11)
Uterine descent	**0 (n=52)**	**I (n=17)**	**II (n=3)**	**III (n=4)**
ICS point C	-5.1 (1.6)	-3.1 (1)	0 (1.73)	2.5 (1.73)
US coordinates	-2.55 (1.04)	-.3 (1.21)	.2 (1.56)	2.4 (.55)
Rectoenterocele	**0 (n=41)**	**I (n=30)**	**II (n=4)**	**III (n=1)**
ICS point Bp	-2.41 (.54)	-1 (.98)	.25 (.5)	4
US coordinates	-.2 (1.6)	1.25 (1.24)	2.28 (.59)	2.3

2.) ICS system and ultrasound quantification of prolapse

Table 2 shows a comparison of ultrasound and ICS system estimates of organ descent.

	Means (SD)	**correlation coefficient r**
ICS point Ba/ US coordinate C (n=76)	-1.19 (1.88) / -0.02 (1.92)	0.77
ICS point C/ US coordinate U (n=30)	-2.9 (2.95) / -0.64 (1.95)	0.86
ICS point Bp/ US coordinate R (n=76)	-1.63 (1.28) / 0.53 (1.64)	0.45

Conclusion

This study demonstrates that translabial ultrasound can be used to quantify uterovaginal prolapse. Ultrasound measurements tend to be higher numerically due to the different point of reference but correlation with the ICS system and clinical staging is good. Discrepancies may be due to the use of a Sims speculum on clinical examination, the varying strength of Valsalva manoeuvres and the fact that the hymen is a less reliable point of reference than the symphysis pubis. Disadvantages of the ultrasound method include incomplete imaging of cervix and vault with large rectoceles and the possible underestimation of severe prolapse due to transducer pressure. Advantages are the fixed point of reference and the ability to distinguish rectocele from enterocele. Both new methods may allow more accurate followup in the future of repair procedures for incontinence and prolapse.

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THE SUB-OPTIMAL ACCURACY OF THE BLADDERSCAN: RELIABILITY AGAINST A KNOWN VOLUME, USING A MEASURE OF AGREEMENT.

Introduction

The Bladderscan™ BVI 2500 is widely used as an alternative to catheterisation for measuring bladder residual